

CONSÓRCIO SAÚDE

CONCREMAT | MEP

MEMORIAL DE CÁLCULO DE QUANTITATIVO PROJETO EXECUTIVO DE FUNDAÇÃO

CER
TIPO 04

AGOSTO/2026
VERSÃO R00

ASSUNTO:	MEMORIAL DESCRITIVO – PROJETO EXECUTIVO – ESTRUTURA	
OBRA:	CER - TIPO 04	
LOCAL:	LOTEAMENTO COLINAS DE BONFIM, QUADRA 28, RUA MACAMBIRA, S/N-SENHOR DO BONFIM – BAHIA.	
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1. INTRODUÇÃO

Este documento tem como objetivo estabelecer parâmetros, especificações e critérios a serem considerados na concepção do projeto da estrutura como parte integrante de um projeto executivo para construção do CER - TIPO 04, Loteamento Colinas De Bonfim, Quadra 28, Rua Macambira, S/N no município de Senhor do Bonfim/BA.

A concepção do projeto estrutural contempla as características e objetivos de uso fornecidos nos documentos de referências informados dos tópicos subsequentes. Quaisquer alterações nas premissas adotadas podem impactar na concepção estrutural e deverão ser devidamente verificadas.

O presente Memorial de Cálculo se refere ao Projeto Executivo Estrutural e compreende informações técnicas relativas ao projeto executivo de FUNDAÇÃO do prédio.

2. DOCUMENTOS DE REFERÊNCIA

2.1. NORMAS DE REFERÊNCIA

ABNT NBR 6118:2023	Projeto de Estruturas de Concreto - Procedimento
ABNT NBR 6120:2019	Cargas para cálculo de estruturas de edificações
ABNT NBR 6122:2022	Projeto e Execução de Fundações
ABNT NBR 6123:2023	Forças Devidas ao Vento em Edificações
ABNT NBR 8681:2003	Ações e Segurança nas Estruturas – Procedimento
ABNT NBR 12655:2022	Controle de cimento Portland
ABNT NBR 5674:2024	Manutenção de edificação – procedimentos
ABNT NBR 14931:2023	Execução de estruturas de concreto armado, protendido e com fibras
ABNT NBR 15575:2024	Edificações habitacionais — Desempenho

3. EXIGENCIAS DE DURABILIDADE

3.1. CONCRETO ARMADO

Na tabela abaixo, seguem propriedades e características do concreto adotado para elementos em geral do projeto.

Tabela 1 – Concreto Adotado na fundação

Propriedade	Valor Adotado
Resistência Característica do concreto (f_{ck})	35 MPa
Módulo de deformação tangente inicial mínimo (E_{ci})	33 GPa
Módulo de deformação secante (E_{cs})	29 GPa
Fator água-cimento máximo (a/c)	0,6
Diâmetro máximo agregado graúdo	19 mm

Para a produção do concreto foi considerada a utilização de agregado graúdo de origem granítica (granito), em especial na avaliação do módulo de elasticidade. Caso sejam utilizados outros tipos de agregados graúdos, o valor do módulo de elasticidade deverá ser ajustado.

3.2. ARMADURA PASSIVA

A ABNT NBR 6118 (2023) define como armadura passiva aquela que não é utilizada para produzir forças de protensão. Nos projetos de estruturas de concreto armado, deve ser utilizado aço classificado pela ABNT NBR 7480, com diâmetros e seções transversais nominais pré-estabelecidos e valor característico de resistência ao escoamento nas categorias CA-50 ($f_{yk}=500$ Mpa) e CA-60 ($f_{yk} = 600$ Mpa).

3.3. ALVENARIA DE PEDRA ARGAMASSADA

PEDRA NATURAL

Pedra de mão de origem ígnea ou metamórfica (granito, gnaiss ou basalto), resistência à compressão ≥ 50 MPa (NBR 15845), absorção d'água $\leq 3,0\%$, massa específica aparente ≥ 2.500 kg/m³, dimensão nominal entre 0,15 e 0,35 m. Isenta de solo aderido, fissuras ou alteração intempérica. Origem em pedreira com laudo de classificação.

ARGAMASSA DE ASSENTAMENTO

Cimento e areia, traço volumétrico 1:4 (C:A), resistência à compressão ≥ 5 MPa aos 28 dias (NBR 13281 — Classe M4). Cimento CP II-E 32 ou CP IV-32; areia média lavada MF 1,5–2,4 (NBR 7211); $a/c \leq 0,65$. Espessura mínima de junta 20 mm, com preenchimento total dos interstícios. Prazo de utilização máximo de 2h após mistura.

DRENAGEM

Barbacãs em PVC Ø 100 mm, espaçamento máx. 2,0 m (horizontal, inclinação $\geq 2\%$ para o exterior. Camada drenante de brita nº 1 atrás da face interna, envolto em geotêxtil não tecido PP ≥ 200 g/m².

Dreno horizontal paralelo ao muro, em PVC Ø 150 mm envolto em geotêxtil não tecido PP ≥ 200 g/m².

ATERRO

Solo granular compactado, GC $\geq 95\%$ Proctor Normal (NBR 7182), em camadas de no máximo 20 cm. Compactação mecânica a distância mínima de 0,50 m da face do muro.

4. COMBINAÇÕES DE AÇÕES

Para as distintas situações de projeto, as combinações de ações serão definidas. Para o ELU será utilizado a combinação última normal. Para o ELS serão utilizadas as combinações quase permanente, combinação frequente e combinação rara.

Combinação última normal

$$F_d = \sum_{i=1}^m \gamma_{gi} \cdot F_{Gi,k} + \gamma_q \left[F_{Q1,k} \sum_{j=2}^n \psi_{0j} \cdot F_{Qj,k} \right]$$

Combinação Quase Permanente De Serviço

Nas combinações quase permanentes de serviço, todas as ações variáveis são consideradas com seus valores quase permanentes $\psi_2 F_{Qk}$

$$F_d = \sum_{i=1}^m F_{Gi,k} + \sum_{j=1}^n \psi_{2j} \cdot F_{Qj,k}$$

Combinação Frequente De Serviço

Nas combinações frequentes de serviço, a ação variável principal F_{Q1} é tomada com seu valor frequente $\psi_1 F_{Q1,k}$ e todas as demais ações variáveis são tomadas com seus valores quase-permanentes $\psi_2 F_{Qk}$

$$F_d = \sum_{i=1}^m F_{Gi,k} + \psi_1 \cdot F_{Q1,k} + \sum_{j=2}^n \psi_{2j} \cdot F_{Qj,k}$$

Combinação Rara De Serviço

Nas combinações raras de serviço, a ação variável principal F_{Q1} é tomada com seu valor característico $F_{Q1,k}$ e todas as demais ações são tomadas com seus valores frequentes $\psi_1 F_{Qk}$:

$$F_d = \sum_{i=1}^m F_{Gi,k} + F_{Q1,k} + \sum_{j=2}^n \psi_{1j} \cdot F_{Qj,k}$$

- Onde:

F_{Gk}	Valor característico das ações permanentes
F_{Q1k}	Valor característico da ação variável, considerada como principal
F_{Qjk}	Valor característico das ações variáveis
γ_g	Coefficiente parcial de segurança das ações permanentes
γ_q	Coefficiente parcial de segurança das ações variáveis
ψ_0	Fator de combinação
ψ_1	Fator de redução frequente
ψ_2	Fator de redução quase permanente

As ações devem ser ponderadas pelo coeficiente Y_f , calculado conforme $Y_f = Y_{f1} \cdot Y_{f2} \cdot Y_{f3}$. Onde, Y_{f1} considera a variabilidade das ações, Y_{f2} considera simultaneidade das ações e Y_{f3} considera possíveis erros da avaliação das ações, seja por problemas construtivos, seja por deficiência do método de cálculo empregado

A seguir são apresentados os coeficientes de ponderação das ações (Y_{f1} , Y_{f3}) para combinação normal do ELU.

Tabela 1: Coeficientes de ponderação das ações para cargas permanentes (Y_g)

Ação	Exemplo	Desfavorável	Favorável
Peso próprio de estruturas de aço e de equipamentos	PP estrutura metálica	1,25	1,00

Peso próprio de estruturas pré-moldadas, de madeira e de elementos construtivos industrializados	PP concreto pré-moldado PP madeira	1,30	1,00
Peso próprio de estruturas moldadas in loco e empuxos permanentes	PP concreto moldado in loco Empuxo de solo	1,40	1,00
Peso próprio de elementos construtivos em geral	Telha Instalações Fotovoltaica	1,40	1,00
Outras	-	1,40	1,00

Tabela 2: Coeficientes de ponderação das ações para cargas variáveis (γ_q)

Ação	Exemplo	Desfavorável	Favorável
Vento	Vento	1,40	0,00
Ações truncadas	Reservatório de água Boiler	1,20	0,00
Demais ações variáveis	Sobrecargas em geral	1,50	0,00
Efeito de temperatura	Devido variação térmica da atmosfera	1,20	0,00

Em geral para o ELS, $\gamma_f = 1,00$.

Os fatores de combinação e de redução ψ para ações variáveis que representam o coeficiente γ_{f2} é apresentado na tabela a seguir

Tabela 3: Valores dos fatores de combinação e de redução das ações variáveis

Ação		ψ_0	ψ_1	ψ_2
Ações variáveis causadas pelo uso e ocupação	Locais em que não há predominância de pesos de equipamentos, nem de elevadas concentrações de pessoas	0,5	0,4	0,3
	Locais em que há predominância de pesos de equipamentos ou de elevadas concentrações de pessoas	0,7	0,6	0,4
	Biblioteca, arquivos, oficinas e garagens	0,8	0,7	0,6
Vento	Pressão dinâmica do vento nas estruturas em geral	0,6	0,3	0,0
Temperatura	Variações uniformes de temperatura em relação à média anual local	0,6	0,5	0,3
Cargas móveis e seus efeitos dinâmicos	Passarelas de pedestres	0,6	0,4	0,3
	Vigas de rolamento de pontes rolantes	1,0	0,8	0,5
	Pilares e outros elementos que suportam vigas de pontes rolantes	0,7	0,6	0,4

Em atendimento ao disposto no item 13.3 da ABNT NBR 6118:2014 (revisão 2023), procedeu-se à verificação do Estado Limite de Serviço (ELS) para todos os elementos estruturais da edificação, com análise específica dos deslocamentos verticais (flechas) em comparação com os respectivos limites normativos de serviço.

As verificações foram realizadas considerando as combinações quase permanentes de ações, incluindo os efeitos de fluência e a consideração do estágio II de fissuração do concreto armado, conforme preconizado pela norma. Os deslocamentos obtidos foram comparados com os limites aplicáveis, tais como $L/250$ para flecha total e $L/500$ para situações envolvendo

elementos sensíveis, como alvenarias e revestimentos, conforme critérios normativos pertinentes.

Após a análise global e individualizada dos elementos estruturais, conclui-se que todos atendem integralmente aos limites de deslocamentos estabelecidos pela ABNT NBR 6118, não sendo identificada nenhuma situação de não conformidade quanto às flechas de serviço.

Dessa forma, atesto, sob responsabilidade técnica, que foram devidamente realizadas as verificações do Estado Limite de Serviço (ELS) de deslocamentos limites em todos os elementos estruturais, estando a estrutura dimensionada com rigidez adequada para garantir funcionalidade, desempenho e integridade dos elementos estruturais e vedação, em plena conformidade com as exigências normativas vigentes.

5. RESULTADOS DAS SAPATAS DO EDIFÍCIO PRINCIPAL:

Esforços e pressões

Nome	MB MH (kN.m)	FB FH (kN)	Carga Carga total (kN)	Pressão Sig1 (kN/m²)	Pressão Sig2 (kN/m²)	Pressão Sig3 (kN/m²)	Pressão Sig4 (kN/m²)
S1	2.07 2.91	3.22 4.09	94.30 116.98	156.18 (lim = 160.00)	139.63 (lim = 160.00)	98.93 (lim = 160.00)	115.48 (lim = 160.00)
S2	0.61 2.23	0.31 3.41	121.61 148.65	149.30 (lim = 160.00)	156.65 (lim = 160.00)	135.20 (lim = 160.00)	127.85 (lim = 160.00)
S3	0.57 2.04	0.49 3.13	113.31 140.35	140.51 (lim = 160.00)	147.36 (lim = 160.00)	128.10 (lim = 160.00)	121.25 (lim = 160.00)
S4	3.03 3.18	5.10 4.10	162.81 199.51	155.51 (lim = 160.00)	141.88 (lim = 160.00)	121.59 (lim = 160.00)	135.21 (lim = 160.00)
S5	2.35 2.80	3.96 1.93	195.74 239.06	142.46 (lim = 160.00)	153.16 (lim = 160.00)	140.45 (lim = 160.00)	129.76 (lim = 160.00)
S6	1.28 2.97	1.39 3.99	122.38 150.14	156.51 (lim = 160.00)	143.83 (lim = 160.00)	115.85 (lim = 160.00)	128.54 (lim = 160.00)
S7	1.61 3.00	2.50 5.42	86.17 108.86	133.37 (lim = 160.00)	145.12 (lim = 160.00)	103.09 (lim = 160.00)	91.33 (lim = 160.00)
S8	0.97 2.78	1.76 4.68	132.72 162.56	157.10 (lim = 160.00)	149.35 (lim = 160.00)	125.61 (lim = 160.00)	133.36 (lim = 160.00)
S9	3.07 2.80	5.62 4.05	153.57 187.17	143.05 (lim = 160.00)	159.97 (lim = 160.00)	137.86 (lim = 160.00)	120.94 (lim = 160.00)
S10	4.15 4.37	6.65 6.45	142.25 178.95	147.81 (lim = 160.00)	127.77 (lim = 160.00)	98.55 (lim = 160.00)	118.59 (lim = 160.00)
S11	4.23 2.54	8.18 3.64	103.88 131.65	114.19 (lim = 160.00)	150.23 (lim = 160.00)	123.99 (lim = 160.00)	87.94 (lim = 160.00)
S12	1.35 0.53	2.23 0.69	105.26 128.23	147.24 (lim = 160.00)	131.78 (lim = 160.00)	140.11 (lim = 160.00)	155.56 (lim = 160.00)
S13	0.84 1.68	0.36 2.29	167.96 203.36	137.96 (lim = 160.00)	144.58 (lim = 160.00)	156.23 (lim = 160.00)	149.61 (lim = 160.00)
S14	0.69 1.38	0.29 2.31	137.61 167.46	142.96 (lim = 160.00)	135.78 (lim = 160.00)	148.27 (lim = 160.00)	155.45 (lim = 160.00)
S15	0.97 1.94	0.31 1.84	194.17 236.34	137.57 (lim = 160.00)	143.56 (lim = 160.00)	154.21 (lim = 160.00)	148.22 (lim = 160.00)
S16	0.79 1.59	0.96 2.18	158.51 193.91	132.35 (lim = 160.00)	138.64 (lim = 160.00)	149.70 (lim = 160.00)	143.41 (lim = 160.00)
S17	0.83 1.25	1.09 2.20	58.41 72.30	105.59 (lim = 160.00)	120.51 (lim = 160.00)	156.12 (lim = 160.00)	141.20 (lim = 160.00)
S18	0.87 2.15	1.59 3.90	173.49 212.04	139.11 (lim = 160.00)	133.06 (lim = 160.00)	144.56 (lim = 160.00)	150.61 (lim = 160.00)
S19	3.41 2.33	5.72 3.51	156.87 193.57	119.08 (lim = 160.00)	135.94 (lim = 160.00)	149.76 (lim = 160.00)	132.90 (lim = 160.00)
S20	3.08 2.14	5.23 4.08	176.65 216.60	139.11 (lim = 160.00)	124.64 (lim = 160.00)	135.36 (lim = 160.00)	149.83 (lim = 160.00)
S21	3.87 1.46	6.59 1.90	133.87 164.48	111.47 (lim = 160.00)	145.19 (lim = 160.00)	157.08 (lim = 160.00)	123.35 (lim = 160.00)
S22	6.36 2.95	11.87 4.07	164.42 204.37	154.61 (lim = 160.00)	122.11 (lim = 160.00)	106.99 (lim = 160.00)	139.48 (lim = 160.00)

S23	5.00 2.08	9.11 2.49	201.53 248.36	129.83 (lim = 160.00)	150.82 (lim = 160.00)	141.06 (lim = 160.00)	120.08 (lim = 160.00)
S24	0.61 1.72	0.54 2.66	121.31 148.35	152.74 (lim = 160.00)	145.40 (lim = 160.00)	131.19 (lim = 160.00)	138.52 (lim = 160.00)
S25	1.85 2.29	2.34 2.90	171.99 208.69	156.87 (lim = 160.00)	144.93 (lim = 160.00)	132.98 (lim = 160.00)	144.93 (lim = 160.00)
S26	2.66 5.49	2.46 7.65	266.26 324.40	158.58 (lim = 160.00)	149.11 (lim = 160.00)	129.77 (lim = 160.00)	139.24 (lim = 160.00)
S27	3.15 2.45	5.62 3.08	122.09 149.85	135.31 (lim = 160.00)	157.78 (lim = 160.00)	136.53 (lim = 160.00)	114.06 (lim = 160.00)
S28	1.45 2.55	1.41 3.66	142.22 172.83	146.00 (lim = 160.00)	158.82 (lim = 160.00)	139.67 (lim = 160.00)	126.85 (lim = 160.00)
S29	1.53 2.49	2.40 3.60	136.30 166.92	152.57 (lim = 160.00)	140.54 (lim = 160.00)	118.50 (lim = 160.00)	130.53 (lim = 160.00)
S30	4.11 2.64	7.58 3.70	192.82 236.14	152.39 (lim = 160.00)	134.97 (lim = 160.00)	124.55 (lim = 160.00)	141.98 (lim = 160.00)
S31	6.95 1.97	12.31 2.41	153.18 189.88	114.65 (lim = 160.00)	159.72 (lim = 160.00)	149.08 (lim = 160.00)	104.01 (lim = 160.00)
S32	5.99 3.18	11.27 5.24	119.74 150.36	131.63 (lim = 160.00)	85.40 (lim = 160.00)	113.56 (lim = 160.00)	159.79 (lim = 160.00)
S33	5.04 1.76	9.08 2.32	175.93 215.87	117.53 (lim = 160.00)	145.95 (lim = 160.00)	156.66 (lim = 160.00)	128.23 (lim = 160.00)
S34	0.55 1.49	0.50 2.48	109.38 133.74	138.32 (lim = 160.00)	130.60 (lim = 160.00)	144.74 (lim = 160.00)	152.45 (lim = 160.00)
S35	1.73 1.93	2.23 2.74	145.64 176.25	145.66 (lim = 160.00)	132.53 (lim = 160.00)	145.66 (lim = 160.00)	158.79 (lim = 160.00)
S36	1.65 1.73	2.02 3.98	147.83 181.42	137.18 (lim = 160.00)	125.51 (lim = 160.00)	137.18 (lim = 160.00)	148.84 (lim = 160.00)
S37	2.79 2.35	4.80 2.88	155.31 188.90	139.11 (lim = 160.00)	158.82 (lim = 160.00)	146.57 (lim = 160.00)	126.85 (lim = 160.00)
S38	4.73 1.91	8.36 2.10	190.81 234.13	155.67 (lim = 160.00)	131.82 (lim = 160.00)	121.40 (lim = 160.00)	145.25 (lim = 160.00)
S39	3.52 2.21	6.08 3.14	152.77 186.36	120.89 (lim = 160.00)	146.01 (lim = 160.00)	157.91 (lim = 160.00)	132.78 (lim = 160.00)
S40	6.58 2.36	11.82 3.62	174.00 213.94	144.88 (lim = 160.00)	112.18 (lim = 160.00)	126.66 (lim = 160.00)	159.36 (lim = 160.00)
S41	8.08 2.17	16.01 3.32	121.93 155.52	80.37 (lim = 160.00)	136.79 (lim = 160.00)	152.91 (lim = 160.00)	96.49 (lim = 160.00)
S42	4.25 4.96	3.97 3.74	104.90 166.72	158.28 (lim = 160.00)	132.94 (lim = 160.00)	93.84 (lim = 160.00)	119.18 (lim = 160.00)
S43	1.93 7.86	1.03 0.94	105.95 158.46	145.05 (lim = 160.00)	156.16 (lim = 160.00)	94.11 (lim = 160.00)	83.00 (lim = 160.00)
S44	4.82 5.23	5.05 4.69	103.88 156.39	113.11 (lim = 160.00)	151.11 (lim = 160.00)	122.84 (lim = 160.00)	84.85 (lim = 160.00)
S45	4.14 3.80	4.92 3.41	118.62 176.93	148.48 (lim = 160.00)	121.11 (lim = 160.00)	95.98 (lim = 160.00)	123.35 (lim = 160.00)
S46	0.78 2.98	1.08 3.84	132.35 174.85	146.14 (lim = 160.00)	152.07 (lim = 160.00)	128.82 (lim = 160.00)	122.89 (lim = 160.00)
S47	1.51 3.08	2.30 4.26	94.12 116.80	156.66 (lim = 160.00)	143.55 (lim = 160.00)	101.18 (lim = 160.00)	114.28 (lim = 160.00)
S48	0.50 1.98	0.48 3.13	99.78 121.61	151.64 (lim = 160.00)	159.85 (lim = 160.00)	132.32 (lim = 160.00)	124.11 (lim = 160.00)

S49	1.33 3.12	1.88 4.03	125.86 156.47	148.29 (lim = 160.00)	137.02 (lim = 160.00)	108.86 (lim = 160.00)	120.13 (lim = 160.00)
S50	0.48 2.75	0.78 4.47	95.99 120.35	138.89 (lim = 160.00)	145.59 (lim = 160.00)	113.65 (lim = 160.00)	106.95 (lim = 160.00)
S51	1.42 5.47	1.60 8.65	100.99 128.75	139.40 (lim = 160.00)	149.81 (lim = 160.00)	93.15 (lim = 160.00)	82.74 (lim = 160.00)
S52	0.84 1.71	1.24 3.20	79.50 98.93	152.29 (lim = 160.00)	139.21 (lim = 160.00)	105.93 (lim = 160.00)	119.01 (lim = 160.00)
S53	1.55 4.33	1.89 6.83	110.40 138.16	141.38 (lim = 160.00)	152.77 (lim = 160.00)	108.31 (lim = 160.00)	96.92 (lim = 160.00)
S54	0.56 4.27	0.37 7.83	112.72 139.76	157.38 (lim = 160.00)	150.66 (lim = 160.00)	107.16 (lim = 160.00)	113.88 (lim = 160.00)
S55	1.66 3.28	1.58 4.72	165.66 202.36	144.22 (lim = 160.00)	155.68 (lim = 160.00)	135.99 (lim = 160.00)	124.53 (lim = 160.00)
S56	2.62 1.80	4.31 1.91	178.52 218.47	152.44 (lim = 160.00)	138.17 (lim = 160.00)	127.20 (lim = 160.00)	141.47 (lim = 160.00)
S57	0.61 2.00	0.96 3.25	122.80 149.84	148.36 (lim = 160.00)	155.78 (lim = 160.00)	138.41 (lim = 160.00)	130.99 (lim = 160.00)
S58	0.54 2.06	0.66 3.36	108.27 132.64	154.53 (lim = 160.00)	146.89 (lim = 160.00)	126.19 (lim = 160.00)	133.83 (lim = 160.00)
S59	0.67 1.90	0.36 3.03	133.94 163.78	145.92 (lim = 160.00)	152.91 (lim = 160.00)	138.92 (lim = 160.00)	131.93 (lim = 160.00)
S60	0.66 1.91	0.35 3.07	131.07 160.91	143.60 (lim = 160.00)	150.44 (lim = 160.00)	136.24 (lim = 160.00)	129.40 (lim = 160.00)
S61	2.51 3.00	3.79 4.42	92.59 115.27	135.20 (lim = 160.00)	156.79 (lim = 160.00)	116.22 (lim = 160.00)	94.62 (lim = 160.00)
S62	7.28 2.14	5.88 1.19	102.51 164.33	147.27 (lim = 160.00)	90.36 (lim = 160.00)	101.14 (lim = 160.00)	158.05 (lim = 160.00)
S63	2.23 0.92	1.84 0.40	33.34 51.47	153.57 (lim = 160.00)	75.68 (lim = 160.00)	56.46 (lim = 160.00)	134.34 (lim = 160.00)
S64	4.72 1.86	6.49 1.22	99.45 147.09	94.90 (lim = 160.00)	136.15 (lim = 160.00)	148.10 (lim = 160.00)	106.85 (lim = 160.00)
S65	3.73 2.76	4.22 2.74	160.71 229.63	138.72 (lim = 160.00)	119.95 (lim = 160.00)	131.87 (lim = 160.00)	150.64 (lim = 160.00)
S66	2.55 1.23	3.59 1.72	158.38 206.31	133.45 (lim = 160.00)	146.71 (lim = 160.00)	155.06 (lim = 160.00)	141.80 (lim = 160.00)
S67	1.74 2.43	2.28 3.67	93.34 116.03	116.54 (lim = 160.00)	103.78 (lim = 160.00)	135.76 (lim = 160.00)	148.52 (lim = 160.00)
S68	0.57 1.59	0.34 2.68	114.88 139.24	143.67 (lim = 160.00)	135.57 (lim = 160.00)	151.02 (lim = 160.00)	159.13 (lim = 160.00)
S69	1.80 1.76	2.45 2.69	143.93 174.54	144.25 (lim = 160.00)	131.27 (lim = 160.00)	144.25 (lim = 160.00)	157.22 (lim = 160.00)
S70	0.57 2.22	0.84 4.15	114.42 141.46	121.90 (lim = 160.00)	128.82 (lim = 160.00)	148.83 (lim = 160.00)	141.91 (lim = 160.00)
S71	1.56 4.18	1.98 7.88	108.51 136.27	105.46 (lim = 160.00)	94.49 (lim = 160.00)	136.80 (lim = 160.00)	147.77 (lim = 160.00)
S72	0.81 1.58	1.01 3.04	81.26 100.69	124.50 (lim = 160.00)	110.99 (lim = 160.00)	140.47 (lim = 160.00)	153.98 (lim = 160.00)
S73	1.41 3.69	1.69 6.49	110.99 138.75	110.26 (lim = 160.00)	99.04 (lim = 160.00)	136.35 (lim = 160.00)	147.57 (lim = 160.00)
S74	0.56 4.07	0.39 7.60	112.58 139.62	117.03 (lim = 160.00)	110.23 (lim = 160.00)	150.18 (lim = 160.00)	156.99 (lim = 160.00)

S75	1.57 3.34	2.14 6.01	117.66 145.42	110.60 (lim = 160.00)	122.80 (lim = 160.00)	153.20 (lim = 160.00)	141.00 (lim = 160.00)
S76	2.42 2.33	4.40 3.61	135.68 166.29	139.98 (lim = 160.00)	121.69 (lim = 160.00)	133.86 (lim = 160.00)	152.16 (lim = 160.00)
S77	0.68 1.70	1.04 2.91	135.74 164.24	138.09 (lim = 160.00)	145.44 (lim = 160.00)	158.80 (lim = 160.00)	151.45 (lim = 160.00)
S78	0.62 1.72	0.53 2.96	123.20 150.24	140.58 (lim = 160.00)	133.14 (lim = 160.00)	146.95 (lim = 160.00)	154.40 (lim = 160.00)
S79	0.78 1.56	0.45 2.62	155.50 188.28	138.98 (lim = 160.00)	145.98 (lim = 160.00)	158.24 (lim = 160.00)	151.24 (lim = 160.00)
S80	0.77 1.60	0.52 2.70	153.22 186.00	137.37 (lim = 160.00)	144.27 (lim = 160.00)	156.36 (lim = 160.00)	149.45 (lim = 160.00)
S81	2.65 1.93	3.63 2.90	119.92 147.68	115.26 (lim = 160.00)	140.21 (lim = 160.00)	152.64 (lim = 160.00)	127.69 (lim = 160.00)
S82	7.28 2.14	5.88 1.19	102.51 164.33	158.05 (lim = 160.00)	101.14 (lim = 160.00)	90.36 (lim = 160.00)	147.27 (lim = 160.00)
S83	2.23 0.92	1.84 0.40	33.34 51.47	134.34 (lim = 160.00)	56.46 (lim = 160.00)	75.68 (lim = 160.00)	153.57 (lim = 160.00)
S86	1.99 1.92	2.12 2.13	181.48 251.40	159.12 (lim = 160.00)	149.86 (lim = 160.00)	140.17 (lim = 160.00)	149.43 (lim = 160.00)
S87	2.68 5.25	5.40 9.27	265.05 323.19	146.82 (lim = 160.00)	156.25 (lim = 160.00)	140.46 (lim = 160.00)	131.04 (lim = 160.00)
S88	0.87 5.09	1.45 9.50	118.00 147.84	153.15 (lim = 160.00)	146.62 (lim = 160.00)	103.96 (lim = 160.00)	110.50 (lim = 160.00)
S89	3.41 5.90	6.74 1.19	248.98 307.12	138.57 (lim = 160.00)	149.90 (lim = 160.00)	134.12 (lim = 160.00)	122.78 (lim = 160.00)
S90	3.04 4.04	4.41 6.48	236.72 287.19	158.03 (lim = 160.00)	145.97 (lim = 160.00)	135.02 (lim = 160.00)	147.08 (lim = 160.00)
S91	1.56 5.89	1.43 2.14	149.73 186.43	153.63 (lim = 160.00)	143.24 (lim = 160.00)	105.20 (lim = 160.00)	115.60 (lim = 160.00)
S92	2.35 5.86	2.95 2.13	185.14 228.46	155.12 (lim = 160.00)	145.01 (lim = 160.00)	115.25 (lim = 160.00)	125.36 (lim = 160.00)
S93	1.80 4.95	1.80 8.52	180.20 220.15	148.22 (lim = 160.00)	159.27 (lim = 160.00)	132.97 (lim = 160.00)	121.92 (lim = 160.00)
S94	1.78 4.83	1.91 8.23	178.11 218.06	146.59 (lim = 160.00)	157.53 (lim = 160.00)	132.41 (lim = 160.00)	121.47 (lim = 160.00)
S95	4.83 2.10	8.91 2.26	209.61 256.44	155.47 (lim = 160.00)	134.62 (lim = 160.00)	124.46 (lim = 160.00)	145.31 (lim = 160.00)
S96	2.80 2.34	4.26 1.67	234.37 284.84	144.77 (lim = 160.00)	154.98 (lim = 160.00)	144.77 (lim = 160.00)	134.57 (lim = 160.00)
S97	3.49 4.11	5.83 6.55	178.56 218.51	137.68 (lim = 160.00)	156.91 (lim = 160.00)	141.93 (lim = 160.00)	122.71 (lim = 160.00)
S98	0.86 1.72	0.08 1.55	172.23 212.11	133.23 (lim = 160.00)	139.22 (lim = 160.00)	149.82 (lim = 160.00)	143.83 (lim = 160.00)
S99	0.85 1.70	0.06 1.55	169.86 206.49	147.19 (lim = 160.00)	140.47 (lim = 160.00)	152.29 (lim = 160.00)	159.00 (lim = 160.00)
S100	4.25 4.96	3.97 3.74	104.90 169.22	114.09 (lim = 160.00)	92.37 (lim = 160.00)	133.86 (lim = 160.00)	155.57 (lim = 160.00)
S101	1.93 7.86	1.03 0.94	105.95 158.36	81.89 (lim = 160.00)	92.56 (lim = 160.00)	157.56 (lim = 160.00)	146.89 (lim = 160.00)
S104	1.77 1.75	1.93 2.02	138.56 192.60	145.49 (lim = 160.00)	135.36 (lim = 160.00)	147.99 (lim = 160.00)	158.12 (lim = 160.00)

S105	3.36 6.00	6.13 9.98	170.18 210.13	108.70 (lim = 160.00)	121.60 (lim = 160.00)	156.62 (lim = 160.00)	143.73 (lim = 160.00)
S106	0.73 5.02	1.23 9.34	100.45 127.49	98.88 (lim = 160.00)	92.86 (lim = 160.00)	143.49 (lim = 160.00)	149.51 (lim = 160.00)
S107	2.29 2.29	1.14 3.54	229.17 279.64	152.70 (lim = 160.00)	142.67 (lim = 160.00)	132.65 (lim = 160.00)	142.67 (lim = 160.00)
S108	2.66 2.93	4.12 3.93	265.69 323.83	134.13 (lim = 160.00)	143.55 (lim = 160.00)	152.97 (lim = 160.00)	143.55 (lim = 160.00)
S109	1.96 4.51	1.79 8.51	196.09 240.64	148.93 (lim = 160.00)	159.62 (lim = 160.00)	135.52 (lim = 160.00)	124.82 (lim = 160.00)
S110	2.22 4.46	3.06 8.32	206.67 254.34	155.09 (lim = 160.00)	145.02 (lim = 160.00)	123.78 (lim = 160.00)	133.85 (lim = 160.00)
S111	2.18 3.39	3.56 5.06	204.43 247.75	134.98 (lim = 160.00)	146.10 (lim = 160.00)	157.22 (lim = 160.00)	146.10 (lim = 160.00)
S112	3.52 2.92	6.25 4.55	212.95 259.78	144.72 (lim = 160.00)	129.41 (lim = 160.00)	139.77 (lim = 160.00)	155.08 (lim = 160.00)
S113	2.20 1.90	3.41 2.12	189.70 229.65	146.97 (lim = 160.00)	135.32 (lim = 160.00)	146.97 (lim = 160.00)	158.63 (lim = 160.00)
S114	2.08 1.87	3.16 1.98	187.04 226.99	133.78 (lim = 160.00)	145.27 (lim = 160.00)	156.76 (lim = 160.00)	145.27 (lim = 160.00)
S115	3.99 4.34	7.22 7.95	137.07 170.66	101.12 (lim = 160.00)	130.53 (lim = 160.00)	156.74 (lim = 160.00)	127.33 (lim = 160.00)
S116	1.51 1.48	2.23 1.99	140.91 171.49	141.73 (lim = 160.00)	129.03 (lim = 160.00)	141.73 (lim = 160.00)	154.43 (lim = 160.00)
S117	0.38 0.78	0.45 1.28	6.96 13.22	59.74 (lim = 160.00)	57.21 (lim = 160.00)	13.71 (lim = 160.00)	16.24 (lim = 160.00)
S118	0.34 1.42	0.35 2.60	10.54 16.81	84.03 (lim = 160.00)	86.71 (lim = 160.00)	8.07 (lim = 160.00)	5.39 (lim = 160.00)
S119	0.38 0.78	0.45 1.28	6.96 13.22	57.21 (lim = 160.00)	59.74 (lim = 160.00)	16.24 (lim = 160.00)	13.71 (lim = 160.00)
S120	0.38 0.78	0.45 1.28	6.96 13.22	59.74 (lim = 160.00)	57.21 (lim = 160.00)	13.71 (lim = 160.00)	16.24 (lim = 160.00)
S121	0.34 1.42	0.35 2.60	10.54 16.81	84.03 (lim = 160.00)	86.70 (lim = 160.00)	8.07 (lim = 160.00)	5.39 (lim = 160.00)
S122	0.38 0.78	0.45 1.28	6.96 13.22	57.21 (lim = 160.00)	59.74 (lim = 160.00)	16.24 (lim = 160.00)	13.71 (lim = 160.00)
S123	2.64 3.11	1.92 4.66	263.54 322.66	152.49 (lim = 160.00)	143.14 (lim = 160.00)	133.79 (lim = 160.00)	143.14 (lim = 160.00)
S130	2.27 3.62	2.20 5.54	227.35 278.70	152.87 (lim = 160.00)	142.99 (lim = 160.00)	130.21 (lim = 160.00)	140.10 (lim = 160.00)
S131	2.76 3.81	4.80 5.72	230.31 280.78	152.84 (lim = 160.00)	142.80 (lim = 160.00)	132.77 (lim = 160.00)	142.80 (lim = 160.00)
S132	2.20 6.39	3.15 9.02	203.04 249.87	145.78 (lim = 160.00)	155.69 (lim = 160.00)	128.43 (lim = 160.00)	118.52 (lim = 160.00)
S133	1.92 6.39	1.88 8.95	192.22 239.05	149.56 (lim = 160.00)	140.18 (lim = 160.00)	112.77 (lim = 160.00)	122.14 (lim = 160.00)
S134	1.96 6.78	1.32 9.62	196.18 243.01	143.46 (lim = 160.00)	153.03 (lim = 160.00)	123.21 (lim = 160.00)	113.64 (lim = 160.00)
S135	2.72 5.66	4.48 9.74	125.48 159.07	128.11 (lim = 160.00)	147.68 (lim = 160.00)	112.45 (lim = 160.00)	92.88 (lim = 160.00)
S142	0.38 0.78	0.45 1.28	6.96 13.22	16.24 (lim = 160.00)	13.72 (lim = 160.00)	57.21 (lim = 160.00)	59.73 (lim = 160.00)

S143	0.34 1.42	0.35 2.60	10.54 16.81	8.06 (lim = 160.00)	5.39 (lim = 160.00)	84.03 (lim = 160.00)	86.71 (lim = 160.00)
S144	0.38 0.78	0.45 1.28	6.96 13.22	13.72 (lim = 160.00)	16.24 (lim = 160.00)	59.73 (lim = 160.00)	57.21 (lim = 160.00)
S145	0.38 0.78	0.45 1.28	6.96 13.22	16.24 (lim = 160.00)	13.72 (lim = 160.00)	57.21 (lim = 160.00)	59.73 (lim = 160.00)
S146	0.34 1.42	0.35 2.60	10.54 16.81	5.39 (lim = 160.00)	8.06 (lim = 160.00)	86.71 (lim = 160.00)	84.03 (lim = 160.00)
S147	0.38 0.78	0.45 1.28	6.96 13.22	13.72 (lim = 160.00)	16.24 (lim = 160.00)	59.73 (lim = 160.00)	57.21 (lim = 160.00)
S150	1.68 1.59	2.59 1.14	159.06 192.64	145.42 (lim = 160.00)	132.89 (lim = 160.00)	145.42 (lim = 160.00)	157.94 (lim = 160.00)
S153	1.60 2.41	1.36 1.48	73.28 115.46	153.63 (lim = 160.00)	135.92 (lim = 160.00)	102.24 (lim = 160.00)	119.95 (lim = 160.00)
S154	1.13 2.65	0.41 1.67	112.79 170.28	147.59 (lim = 160.00)	157.76 (lim = 160.00)	133.87 (lim = 160.00)	123.70 (lim = 160.00)
S155	1.76 2.13	1.76 1.62	121.44 169.97	155.62 (lim = 160.00)	144.55 (lim = 160.00)	125.33 (lim = 160.00)	136.40 (lim = 160.00)
S156	2.56 2.77	3.19 2.64	117.43 157.00	134.83 (lim = 160.00)	149.62 (lim = 160.00)	124.68 (lim = 160.00)	109.88 (lim = 160.00)
S157	4.30 1.93	7.37 2.23	123.19 153.80	149.14 (lim = 160.00)	122.49 (lim = 160.00)	105.08 (lim = 160.00)	131.73 (lim = 160.00)
S158	5.13 1.55	9.14 1.69	95.61 119.56	112.82 (lim = 160.00)	159.55 (lim = 160.00)	138.89 (lim = 160.00)	92.16 (lim = 160.00)
S159	5.18 1.40	9.17 1.43	128.73 159.34	155.69 (lim = 160.00)	110.51 (lim = 160.00)	99.35 (lim = 160.00)	144.54 (lim = 160.00)
S160	3.37 6.73	5.64 11.50	235.89 290.12	120.91 (lim = 160.00)	130.20 (lim = 160.00)	155.07 (lim = 160.00)	145.78 (lim = 160.00)
S164	1.65 2.58	2.23 3.96	162.09 199.86	124.11 (lim = 160.00)	135.28 (lim = 160.00)	151.87 (lim = 160.00)	140.70 (lim = 160.00)
S165	2.18 3.21	3.07 5.20	168.61 206.39	137.78 (lim = 160.00)	126.16 (lim = 160.00)	147.09 (lim = 160.00)	158.71 (lim = 160.00)
S169	3.06 6.36	5.10 11.01	160.14 200.09	104.26 (lim = 160.00)	121.29 (lim = 160.00)	151.85 (lim = 160.00)	134.82 (lim = 160.00)
S170	2.71 4.90	4.83 9.00	186.63 229.95	133.07 (lim = 160.00)	120.28 (lim = 160.00)	139.05 (lim = 160.00)	151.84 (lim = 160.00)
S171	2.35 3.12	2.91 6.85	235.18 285.65	135.28 (lim = 160.00)	145.55 (lim = 160.00)	155.82 (lim = 160.00)	145.55 (lim = 160.00)
S172	2.26 2.94	1.52 6.57	225.76 276.23	130.87 (lim = 160.00)	140.72 (lim = 160.00)	150.58 (lim = 160.00)	140.72 (lim = 160.00)
S173	2.53 3.06	1.70 7.02	252.54 306.77	135.69 (lim = 160.00)	145.61 (lim = 160.00)	155.52 (lim = 160.00)	145.61 (lim = 160.00)
S174	2.32 4.39	3.66 8.07	158.51 195.21	118.60 (lim = 160.00)	132.59 (lim = 160.00)	152.14 (lim = 160.00)	138.15 (lim = 160.00)
S175	1.60 3.98	0.28 3.04	125.37 188.55	157.44 (lim = 160.00)	148.02 (lim = 160.00)	118.61 (lim = 160.00)	128.03 (lim = 160.00)
S176	1.55 3.15	0.85 2.15	150.88 226.16	145.55 (lim = 160.00)	154.55 (lim = 160.00)	138.36 (lim = 160.00)	129.36 (lim = 160.00)
S177	2.87 3.39	1.58 3.03	209.50 289.88	157.47 (lim = 160.00)	145.50 (lim = 160.00)	136.42 (lim = 160.00)	148.39 (lim = 160.00)
S178	2.35 4.27	0.38 4.77	203.70 264.39	146.06 (lim = 160.00)	155.79 (lim = 160.00)	139.53 (lim = 160.00)	129.79 (lim = 160.00)

S179	3.82 3.82	2.51 5.72	231.68 282.15	155.85 (lim = 160.00)	139.90 (lim = 160.00)	129.86 (lim = 160.00)	145.81 (lim = 160.00)
S180	2.10 3.63	1.18 5.98	209.57 256.39	140.68 (lim = 160.00)	150.90 (lim = 160.00)	140.68 (lim = 160.00)	130.46 (lim = 160.00)
S181	6.55 3.77	12.76 6.04	244.40 298.64	156.51 (lim = 160.00)	135.58 (lim = 160.00)	126.02 (lim = 160.00)	146.96 (lim = 160.00)
S182	6.30 8.08	11.92 14.25	239.05 297.19	134.90 (lim = 160.00)	153.88 (lim = 160.00)	129.27 (lim = 160.00)	110.29 (lim = 160.00)
S183	1.22 2.36	1.48 1.04	99.97 122.65	141.85 (lim = 160.00)	155.36 (lim = 160.00)	122.39 (lim = 160.00)	108.87 (lim = 160.00)
S184	1.66 2.86	1.84 4.41	165.68 202.38	137.60 (lim = 160.00)	126.09 (lim = 160.00)	143.49 (lim = 160.00)	155.00 (lim = 160.00)
S185	1.69 4.31	1.68 7.35	169.12 209.07	139.68 (lim = 160.00)	150.03 (lim = 160.00)	126.99 (lim = 160.00)	116.65 (lim = 160.00)
S186	2.12 2.12	2.73 6.50	212.20 259.02	152.04 (lim = 160.00)	141.73 (lim = 160.00)	131.42 (lim = 160.00)	141.73 (lim = 160.00)
S187	2.32 3.09	1.03 5.40	231.56 282.03	143.65 (lim = 160.00)	153.75 (lim = 160.00)	143.65 (lim = 160.00)	133.54 (lim = 160.00)
S188	2.26 2.90	1.38 5.07	226.01 276.48	140.82 (lim = 160.00)	150.68 (lim = 160.00)	140.82 (lim = 160.00)	130.95 (lim = 160.00)
S189	0.62 1.25	0.56 1.45	124.57 151.60	154.47 (lim = 160.00)	146.99 (lim = 160.00)	134.08 (lim = 160.00)	141.56 (lim = 160.00)
S190	2.70 7.39	4.70 12.96	171.16 214.48	135.62 (lim = 160.00)	149.09 (lim = 160.00)	118.14 (lim = 160.00)	104.67 (lim = 160.00)
S191	1.16 0.70	2.91 0.60	139.56 169.55	145.17 (lim = 160.00)	155.67 (lim = 160.00)	148.43 (lim = 160.00)	137.93 (lim = 160.00)
S192	1.62 0.81	5.72 0.44	162.37 196.12	151.32 (lim = 160.00)	139.49 (lim = 160.00)	146.53 (lim = 160.00)	158.36 (lim = 160.00)
S193	1.75 0.56	1.41 0.42	84.69 127.99	157.25 (lim = 160.00)	136.26 (lim = 160.00)	129.56 (lim = 160.00)	150.55 (lim = 160.00)
S194	1.18 0.59	0.84 0.28	118.47 177.37	145.06 (lim = 160.00)	154.85 (lim = 160.00)	148.98 (lim = 160.00)	139.18 (lim = 160.00)
S195	0.58 0.18	1.00 0.09	9.11 18.00	36.31 (lim = 160.00)	67.63 (lim = 160.00)	63.27 (lim = 160.00)	31.95 (lim = 160.00)
S196	1.38 2.24	2.84 2.14	224.28 273.46	142.83 (lim = 160.00)	137.04 (lim = 160.00)	146.87 (lim = 160.00)	152.66 (lim = 160.00)
S197	1.99 2.87	1.58 2.41	137.99 207.09	139.41 (lim = 160.00)	128.60 (lim = 160.00)	144.52 (lim = 160.00)	155.34 (lim = 160.00)
S198	1.25 2.17	0.74 1.22	125.40 188.57	154.63 (lim = 160.00)	144.76 (lim = 160.00)	130.11 (lim = 160.00)	139.98 (lim = 160.00)
S199	2.51 3.27	1.95 3.16	251.38 351.07	145.94 (lim = 160.00)	137.86 (lim = 160.00)	145.94 (lim = 160.00)	154.03 (lim = 160.00)
S200	2.58 3.29	1.71 4.46	258.22 333.64	148.11 (lim = 160.00)	138.95 (lim = 160.00)	148.11 (lim = 160.00)	157.28 (lim = 160.00)
S201	6.04 3.33	9.25 5.57	274.21 336.90	144.21 (lim = 160.00)	126.88 (lim = 160.00)	135.70 (lim = 160.00)	153.02 (lim = 160.00)
S202	5.19 4.73	10.25 8.06	211.06 261.53	115.59 (lim = 160.00)	135.13 (lim = 160.00)	150.80 (lim = 160.00)	131.27 (lim = 160.00)
S203	1.63 1.63	2.60 2.02	162.53 199.23	138.22 (lim = 160.00)	126.94 (lim = 160.00)	138.22 (lim = 160.00)	149.49 (lim = 160.00)
S204	7.13 7.37	11.95 13.76	200.15 250.62	130.94 (lim = 160.00)	100.24 (lim = 160.00)	124.80 (lim = 160.00)	155.49 (lim = 160.00)

S205	4.89 2.56	10.42 1.38	256.00 314.14	127.09 (lim = 160.00)	143.05 (lim = 160.00)	152.15 (lim = 160.00)	136.19 (lim = 160.00)
S206	4.54 3.85	10.28 6.22	309.40 376.29	148.86 (lim = 160.00)	136.05 (lim = 160.00)	145.11 (lim = 160.00)	157.93 (lim = 160.00)
S207	6.57 8.94	10.70 3.06	163.82 210.65	80.50 (lim = 160.00)	111.45 (lim = 160.00)	150.08 (lim = 160.00)	119.13 (lim = 160.00)
S208	1.89 4.94	1.50 7.47	164.71 204.66	112.93 (lim = 160.00)	123.05 (lim = 160.00)	149.04 (lim = 160.00)	138.92 (lim = 160.00)
S209	2.24 4.57	2.81 6.69	223.71 274.17	136.45 (lim = 160.00)	126.67 (lim = 160.00)	143.31 (lim = 160.00)	153.10 (lim = 160.00)
S210	1.19 1.53	2.12 3.67	152.87 185.65	136.11 (lim = 160.00)	145.14 (lim = 160.00)	157.20 (lim = 160.00)	148.18 (lim = 160.00)
S211	2.08 6.85	1.83 13.63	88.98 116.75	63.58 (lim = 160.00)	84.90 (lim = 160.00)	145.01 (lim = 160.00)	123.69 (lim = 160.00)
S212	2.08 4.41	1.80 3.47	122.83 191.93	151.43 (lim = 160.00)	139.53 (lim = 160.00)	110.70 (lim = 160.00)	122.60 (lim = 160.00)
S213	1.59 5.79	1.09 5.08	159.16 247.57	144.53 (lim = 160.00)	152.29 (lim = 160.00)	127.15 (lim = 160.00)	119.38 (lim = 160.00)
S214	1.34 3.77	0.90 2.96	134.13 203.23	155.59 (lim = 160.00)	146.45 (lim = 160.00)	123.13 (lim = 160.00)	132.27 (lim = 160.00)
S215	1.86 1.34	1.54 1.71	185.89 255.30	159.39 (lim = 160.00)	149.63 (lim = 160.00)	142.60 (lim = 160.00)	152.36 (lim = 160.00)
S216	3.33 3.66	4.33 4.15	175.63 231.75	137.97 (lim = 160.00)	150.09 (lim = 160.00)	132.54 (lim = 160.00)	120.43 (lim = 160.00)
S217	1.80 1.66	2.71 3.31	124.62 151.66	159.42 (lim = 160.00)	146.41 (lim = 160.00)	130.83 (lim = 160.00)	143.84 (lim = 160.00)
S218	1.93 4.84	1.99 8.66	193.00 236.32	156.46 (lim = 160.00)	145.91 (lim = 160.00)	123.22 (lim = 160.00)	133.76 (lim = 160.00)
S219	1.26 0.63	0.87 1.12	126.49 153.53	157.34 (lim = 160.00)	144.14 (lim = 160.00)	136.49 (lim = 160.00)	149.70 (lim = 160.00)
S220	0.65 1.25	1.34 2.11	82.96 102.39	120.07 (lim = 160.00)	132.81 (lim = 160.00)	146.41 (lim = 160.00)	133.67 (lim = 160.00)
S221	0.82 1.42	0.79 1.10	93.86 139.83	145.83 (lim = 160.00)	136.07 (lim = 160.00)	150.10 (lim = 160.00)	159.87 (lim = 160.00)
S222	1.74 2.65	1.72 4.29	173.85 210.55	146.22 (lim = 160.00)	134.14 (lim = 160.00)	146.22 (lim = 160.00)	158.29 (lim = 160.00)
S223	2.52 2.20	4.09 5.44	132.19 162.81	130.62 (lim = 160.00)	117.76 (lim = 160.00)	136.53 (lim = 160.00)	149.39 (lim = 160.00)
S224	1.88 2.09	3.06 3.11	122.72 150.48	119.20 (lim = 160.00)	131.91 (lim = 160.00)	153.53 (lim = 160.00)	140.83 (lim = 160.00)
S225	1.45 3.79	2.06 1.27	98.76 123.81	94.11 (lim = 160.00)	105.83 (lim = 160.00)	151.32 (lim = 160.00)	139.60 (lim = 160.00)
S226	1.34 2.71	1.59 1.06	93.50 116.18	114.32 (lim = 160.00)	101.47 (lim = 160.00)	139.41 (lim = 160.00)	152.26 (lim = 160.00)
S227	1.15 2.55	1.02 2.91	76.93 95.34	93.71 (lim = 160.00)	109.35 (lim = 160.00)	155.54 (lim = 160.00)	139.90 (lim = 160.00)
S228	1.67 4.36	1.38 3.91	99.46 156.95	115.57 (lim = 160.00)	103.96 (lim = 160.00)	143.16 (lim = 160.00)	154.77 (lim = 160.00)
S229	1.35 5.83	0.61 5.11	134.99 210.27	112.19 (lim = 160.00)	120.38 (lim = 160.00)	154.84 (lim = 160.00)	146.65 (lim = 160.00)
S230	1.35 3.47	0.85 2.86	134.87 203.97	134.22 (lim = 160.00)	124.99 (lim = 160.00)	146.39 (lim = 160.00)	155.62 (lim = 160.00)

S231	2.14 6.92	2.06 5.86	213.90 306.60	128.21 (lim = 160.00)	120.61 (lim = 160.00)	144.32 (lim = 160.00)	151.93 (lim = 160.00)
S232	3.25 3.43	4.47 4.11	184.81 240.93	126.14 (lim = 160.00)	138.88 (lim = 160.00)	155.37 (lim = 160.00)	142.63 (lim = 160.00)
S233	3.31 7.35	4.68 10.74	158.29 198.24	115.26 (lim = 160.00)	97.47 (lim = 160.00)	136.95 (lim = 160.00)	154.74 (lim = 160.00)
S234	1.99 6.07	3.33 9.93	151.63 188.33	103.83 (lim = 160.00)	114.23 (lim = 160.00)	154.99 (lim = 160.00)	144.60 (lim = 160.00)
S235	1.34 1.97	1.92 2.92	69.42 87.29	94.83 (lim = 160.00)	108.39 (lim = 160.00)	146.79 (lim = 160.00)	133.23 (lim = 160.00)
S84-85	14.07 16.55	5.42 5.02	215.74 315.91	123.73 (lim = 160.00)	158.97 (lim = 160.00)	111.95 (lim = 160.00)	76.71 (lim = 160.00)
S102-103	5.96 18.38	4.08 9.15	188.71 290.45	79.53 (lim = 160.00)	93.26 (lim = 160.00)	157.58 (lim = 160.00)	143.85 (lim = 160.00)
SM1	18.44 2.68	3.64 5.23	61.95 102.24	7.12 (lim = 160.00)	100.06 (lim = 160.00)	91.67 (lim = 160.00)	-1.27 (lim = 160.00)
SM2	18.44 2.68	3.64 5.23	61.95 102.24	7.12 (lim = 160.00)	100.06 (lim = 160.00)	91.67 (lim = 160.00)	-1.27 (lim = 160.00)

Estabilidade

Nome	Tombamento B		Tombamento H		Deslizamento		Arrancamento	
	Mrd Msd (kN.m)	Mrd / Msd	Mrd Msd (kN.m)	Mrd / Msd	Frd Fsd (kN)	Frd / Fsd	Nt (kN)	Ns (kN)
S1	51.53 2.07	24.94 (lim = 1.50)	51.87 2.89	17.96 (lim = 1.50)	39.96 4.87	8.21 lim = (1.50)		
S2	70.61 0.61	116.12 (lim = 1.50)	73.82 2.17	34.08 (lim = 1.50)	49.11 3.34	14.70 lim = (1.50)		
S3	66.67 0.57	117.67 (lim = 1.50)	69.85 2.02	34.53 (lim = 1.50)	46.48 3.14	14.78 lim = (1.50)		
S4	106.39 3.03	35.07 (lim = 1.50)	107.89 2.99	36.03 (lim = 1.50)	64.89 5.96	10.89 lim = (1.50)		
S5	134.13 2.35	56.99 (lim = 1.50)	135.26 2.80	48.22 (lim = 1.50)	75.51 4.17	18.10 lim = (1.50)		
S6	71.01 1.28	55.29 (lim = 1.50)	71.92 2.84	25.34 (lim = 1.50)	50.13 3.93	12.75 lim = (1.50)		
S7	47.18 1.58	29.78 (lim = 1.50)	50.68 3.00	16.88 (lim = 1.50)	36.74 5.44	6.76 lim = (1.50)		
S8	76.03 0.97	78.53 (lim = 1.50)	89.11 2.71	32.91 (lim = 1.50)	56.71 4.81	11.80 lim = (1.50)		
S9	101.38 3.04	33.35 (lim = 1.50)	103.68 2.80	36.97 (lim = 1.50)	64.52 6.28	10.27 lim = (1.50)		
S10	102.09 4.15	24.61 (lim = 1.50)	106.74 4.37	24.42 (lim = 1.50)	62.27 8.36	7.45 lim = (1.50)		
S11	66.60 4.23	15.76 (lim = 1.50)	67.44 2.54	26.59 (lim = 1.50)	46.37 8.65	5.36 lim = (1.50)		
S12	61.05 1.35	45.18 (lim = 1.50)	54.50 0.53	103.55 (lim = 1.50)	42.56 2.25	18.92 lim = (1.50)		
S13	111.85 0.84	133.19 (lim = 1.50)	127.10 1.68	75.67 (lim = 1.50)	62.26 2.29	27.22 lim = (1.50)		

S14	83.73 0.69	121.68 (lim = 1.50)	82.04 1.34	61.18 (lim = 1.50)	52.21 2.32	22.55 lim = (1.50)		
S15	141.80 0.97	146.06 (lim = 1.50)	159.53 1.94	82.16 (lim = 1.50)	70.47 1.84	38.22 lim = (1.50)		
S16	106.65 0.79	134.57 (lim = 1.50)	121.19 1.59	76.46 (lim = 1.50)	59.12 2.30	25.72 lim = (1.50)		
S17	25.47 0.75	33.80 (lim = 1.50)	19.98 1.25	16.00 (lim = 1.50)	22.49 2.21	10.20 lim = (1.50)		
S18	109.96 0.86	127.29 (lim = 1.50)	125.77 2.15	58.58 (lim = 1.50)	70.81 4.13	17.16 lim = (1.50)		
S19	107.29 3.37	31.84 (lim = 1.50)	109.52 2.31	47.50 (lim = 1.50)	65.44 6.28	10.42 lim = (1.50)		
S20	124.49 3.08	40.41 (lim = 1.50)	126.46 2.14	59.18 (lim = 1.50)	72.89 6.03	12.09 lim = (1.50)		
S21	86.64 3.87	22.37 (lim = 1.50)	86.01 1.46	58.83 (lim = 1.50)	57.61 6.60	8.73 lim = (1.50)		
S22	116.81 6.36	18.38 (lim = 1.50)	116.89 2.95	39.67 (lim = 1.50)	68.34 12.08	5.66 lim = (1.50)		
S23	144.26 5.00	28.86 (lim = 1.50)	145.76 2.08	70.15 (lim = 1.50)	78.21 9.22	8.48 lim = (1.50)		
S24	70.47 0.61	116.17 (lim = 1.50)	69.92 1.72	40.76 (lim = 1.50)	46.52 2.67	17.43 lim = (1.50)		
S25	104.90 1.78	58.95 (lim = 1.50)	106.52 2.29	46.43 (lim = 1.50)	64.97 3.18	20.44 lim = (1.50)		
S26	243.30 2.66	91.38 (lim = 1.50)	232.03 5.49	42.25 (lim = 1.50)	113.22 7.60	14.91 lim = (1.50)		
S27	66.49 3.15	21.12 (lim = 1.50)	67.32 2.45	27.53 (lim = 1.50)	46.34 5.99	7.73 lim = (1.50)		
S28	90.21 1.45	62.32 (lim = 1.50)	81.50 2.55	31.91 (lim = 1.50)	54.23 3.69	14.69 lim = (1.50)		
S29	84.08 1.53	55.09 (lim = 1.50)	85.33 2.49	34.28 (lim = 1.50)	56.78 3.75	15.13 lim = (1.50)		
S30	141.93 4.11	34.57 (lim = 1.50)	143.93 2.63	54.81 (lim = 1.50)	79.90 8.06	9.92 lim = (1.50)		
S31	108.56 6.95	15.63 (lim = 1.50)	108.05 1.97	54.73 (lim = 1.50)	66.18 12.31	5.38 lim = (1.50)		
S32	76.88 5.99	12.84 (lim = 1.50)	77.70 3.18	24.40 (lim = 1.50)	51.05 12.02	4.25 lim = (1.50)		
S33	121.60 5.04	24.13 (lim = 1.50)	123.13 1.71	72.14 (lim = 1.50)	71.20 9.15	7.78 lim = (1.50)		
S34	60.18 0.55	110.05 (lim = 1.50)	63.06 1.49	42.26 (lim = 1.50)	43.95 2.49	17.68 lim = (1.50)		
S35	86.26 1.71	50.30 (lim = 1.50)	87.69 1.93	45.33 (lim = 1.50)	58.35 3.03	19.28 lim = (1.50)		
S36	95.81 1.61	59.56 (lim = 1.50)	96.83 1.73	56.02 (lim = 1.50)	61.63 4.05	15.22 lim = (1.50)		
S37	95.48 2.79	34.28 (lim = 1.50)	94.37 2.28	41.41 (lim = 1.50)	60.06 4.94	12.17 lim = (1.50)		
S38	135.26 4.73	28.61 (lim = 1.50)	134.86 1.79	75.40 (lim = 1.50)	76.12 8.36	9.10 lim = (1.50)		
S39	101.03 3.49	28.91 (lim = 1.50)	102.71 2.21	46.47 (lim = 1.50)	64.30 6.41	10.03 lim = (1.50)		

S40	126.33 6.58	19.20 (lim = 1.50)	128.59 2.30	55.92 (lim = 1.50)	73.97 12.06	6.14 lim = (1.50)		
S41	85.90 8.08	10.63 (lim = 1.50)	86.85 2.17	40.11 (lim = 1.50)	54.60 16.20	3.37 lim = (1.50)		
S42	95.60 4.25	22.48 (lim = 1.50)	95.86 4.96	19.35 (lim = 1.50)	61.01 5.19	11.76 lim = (1.50)		
S43	91.01 1.93	47.14 (lim = 1.50)	90.93 7.86	11.56 (lim = 1.50)	57.92 1.12	51.72 lim = (1.50)		
S44	89.71 4.82	18.63 (lim = 1.50)	89.92 5.23	17.19 (lim = 1.50)	57.10 6.41	8.90 lim = (1.50)		
S45	103.12 4.14	24.91 (lim = 1.50)	104.21 3.79	27.53 (lim = 1.50)	63.56 5.92	10.73 lim = (1.50)		
S46	87.92 0.78	113.32 (lim = 1.50)	101.57 2.91	34.93 (lim = 1.50)	61.95 3.91	15.84 lim = (1.50)		
S47	52.20 1.50	34.84 (lim = 1.50)	53.80 3.08	17.46 (lim = 1.50)	41.45 4.39	9.44 lim = (1.50)		
S48	51.68 0.50	103.60 (lim = 1.50)	58.61 1.98	29.56 (lim = 1.50)	42.89 3.13	13.69 lim = (1.50)		
S49	81.80 1.30	62.72 (lim = 1.50)	83.36 3.10	26.91 (lim = 1.50)	55.46 4.12	13.46 lim = (1.50)		
S50	51.46 0.48	108.32 (lim = 1.50)	61.24 2.75	22.28 (lim = 1.50)	42.69 4.49	9.50 lim = (1.50)		
S51	64.30 1.42	45.29 (lim = 1.50)	65.80 5.44	12.10 (lim = 1.50)	45.87 8.66	5.30 lim = (1.50)		
S52	45.05 0.82	54.65 (lim = 1.50)	38.44 1.71	22.46 (lim = 1.50)	35.17 3.21	10.96 lim = (1.50)		
S53	69.87 1.55	45.22 (lim = 1.50)	70.68 4.33	16.31 (lim = 1.50)	49.27 6.87	7.17 lim = (1.50)		
S54	66.38 0.56	117.79 (lim = 1.50)	73.89 4.27	17.32 (lim = 1.50)	49.16 7.83	6.28 lim = (1.50)		
S55	121.42 1.66	73.29 (lim = 1.50)	107.93 3.28	32.90 (lim = 1.50)	65.83 4.83	13.62 lim = (1.50)		
S56	118.44 2.62	45.15 (lim = 1.50)	118.00 1.80	65.73 (lim = 1.50)	69.31 4.33	16.02 lim = (1.50)		
S57	63.59 0.57	111.52 (lim = 1.50)	74.11 2.00	37.03 (lim = 1.50)	49.31 3.31	14.90 lim = (1.50)		
S58	59.69 0.54	110.26 (lim = 1.50)	62.61 2.06	30.41 (lim = 1.50)	43.65 3.38	12.92 lim = (1.50)		
S59	81.89 0.67	122.28 (lim = 1.50)	84.00 1.90	44.31 (lim = 1.50)	53.46 3.03	17.62 lim = (1.50)		
S60	80.45 0.66	122.77 (lim = 1.50)	82.58 1.91	43.23 (lim = 1.50)	52.56 3.07	17.09 lim = (1.50)		
S61	50.51 2.49	20.28 (lim = 1.50)	51.04 3.00	17.04 (lim = 1.50)	39.32 5.37	7.32 lim = (1.50)		
S62	94.49 7.28	12.98 (lim = 1.50)	94.41 2.14	44.12 (lim = 1.50)	60.11 5.88	10.22 lim = (1.50)		
S63	18.01 2.23	8.09 (lim = 1.50)	18.02 0.92	19.68 (lim = 1.50)	18.83 1.86	10.13 lim = (1.50)		
S64	80.90 4.72	17.14 (lim = 1.50)	80.79 1.86	43.35 (lim = 1.50)	53.80 6.50	8.28 lim = (1.50)		
S65	142.29 3.73	38.14 (lim = 1.50)	141.46 2.76	51.20 (lim = 1.50)	79.64 5.01	15.89 lim = (1.50)		

S66	121.85 2.55	47.87 (lim = 1.50)	104.63 1.23	85.02 (lim = 1.50)	68.60 3.88	17.68 lim = (1.50)		
S67	49.13 1.71	28.79 (lim = 1.50)	50.89 2.43	20.95 (lim = 1.50)	39.21 3.82	10.26 lim = (1.50)		
S68	62.66 0.57	109.09 (lim = 1.50)	66.15 1.59	41.67 (lim = 1.50)	46.11 2.68	17.19 lim = (1.50)		
S69	85.58 1.72	49.63 (lim = 1.50)	86.71 1.76	49.20 (lim = 1.50)	57.70 3.08	18.75 lim = (1.50)		
S70	67.19 0.57	117.45 (lim = 1.50)	70.69 2.22	31.87 (lim = 1.50)	47.03 4.19	11.23 lim = (1.50)		
S71	65.81 1.52	43.36 (lim = 1.50)	66.20 4.18	15.84 (lim = 1.50)	46.14 7.91	5.83 lim = (1.50)		
S72	43.57 0.76	57.58 (lim = 1.50)	36.91 1.58	23.40 (lim = 1.50)	33.77 3.04	11.11 lim = (1.50)		
S73	65.53 1.36	48.07 (lim = 1.50)	67.10 3.69	18.20 (lim = 1.50)	46.77 6.51	7.18 lim = (1.50)		
S74	66.32 0.56	117.82 (lim = 1.50)	71.05 4.07	17.46 (lim = 1.50)	47.27 7.60	6.22 lim = (1.50)		
S75	67.32 1.57	42.79 (lim = 1.50)	67.57 3.34	20.24 (lim = 1.50)	47.10 6.21	7.59 lim = (1.50)		
S76	76.29 2.42	31.48 (lim = 1.50)	76.78 2.33	32.99 (lim = 1.50)	50.77 5.23	9.71 lim = (1.50)		
S77	69.27 0.64	108.64 (lim = 1.50)	76.63 1.70	44.98 (lim = 1.50)	50.99 3.00	17.01 lim = (1.50)		
S78	71.36 0.62	115.85 (lim = 1.50)	70.31 1.72	40.90 (lim = 1.50)	46.78 2.97	15.73 lim = (1.50)		
S79	98.85 0.78	127.13 (lim = 1.50)	95.09 1.55	61.16 (lim = 1.50)	58.00 2.63	22.06 lim = (1.50)		
S80	97.65 0.77	127.46 (lim = 1.50)	94.01 1.60	58.90 (lim = 1.50)	57.34 2.70	21.22 lim = (1.50)		
S81	70.39 2.63	26.72 (lim = 1.50)	69.41 1.93	35.94 (lim = 1.50)	48.38 4.10	11.80 lim = (1.50)		
S82	94.49 7.28	12.98 (lim = 1.50)	94.41 2.14	44.12 (lim = 1.50)	60.11 5.88	10.22 lim = (1.50)		
S83	18.01 2.23	8.09 (lim = 1.50)	18.02 0.92	19.68 (lim = 1.50)	18.83 1.86	10.13 lim = (1.50)		
S86	154.08 1.94	79.57 (lim = 1.50)	133.84 1.92	69.54 (lim = 1.50)	80.55 2.83	28.50 lim = (1.50)		
S87	211.41 2.67	79.18 (lim = 1.50)	213.07 5.25	40.57 (lim = 1.50)	103.96 10.18	10.21 lim = (1.50)		
S88	66.90 0.87	76.84 (lim = 1.50)	78.16 5.09	15.36 (lim = 1.50)	49.74 9.57	5.20 lim = (1.50)		
S89	199.06 3.27	60.91 (lim = 1.50)	198.71 5.55	35.81 (lim = 1.50)	97.13 6.52	14.90 lim = (1.50)		
S90	173.35 3.00	57.72 (lim = 1.50)	173.01 4.04	42.85 (lim = 1.50)	90.45 7.20	12.57 lim = (1.50)		
S91	97.95 1.56	62.68 (lim = 1.50)	97.89 5.59	17.51 (lim = 1.50)	59.70 1.99	29.93 lim = (1.50)		
S92	128.84 2.35	54.72 (lim = 1.50)	129.02 5.55	23.24 (lim = 1.50)	72.54 3.25	22.34 lim = (1.50)		
S93	137.59 1.80	76.35 (lim = 1.50)	117.83 4.95	23.79 (lim = 1.50)	68.99 8.59	8.03 lim = (1.50)		

S94	136.23 1.78	76.52 (lim = 1.50)	110.30 4.83	22.84 (lim = 1.50)	64.58 8.29	7.79 lim = (1.50)		
S95	141.93 4.83	29.36 (lim = 1.50)	173.10 2.10	82.58 (lim = 1.50)	76.95 9.01	8.54 lim = (1.50)		
S96	165.41 2.60	63.54 (lim = 1.50)	199.39 2.34	85.07 (lim = 1.50)	86.47 4.10	21.11 lim = (1.50)		
S97	121.51 3.49	34.80 (lim = 1.50)	119.95 4.11	29.21 (lim = 1.50)	70.23 8.37	8.39 lim = (1.50)		
S98	121.96 0.86	141.63 (lim = 1.50)	137.87 1.72	80.05 (lim = 1.50)	61.71 1.41	43.71 lim = (1.50)		
S99	113.57 0.85	133.72 (lim = 1.50)	129.06 1.70	75.98 (lim = 1.50)	59.91 1.37	43.68 lim = (1.50)		
S100	109.69 4.25	25.80 (lim = 1.50)	88.84 4.96	17.93 (lim = 1.50)	61.93 5.19	11.94 lim = (1.50)		
S101	94.91 1.93	49.15 (lim = 1.50)	86.92 7.86	11.05 (lim = 1.50)	57.88 1.12	51.68 lim = (1.50)		
S104	113.36 1.75	64.77 (lim = 1.50)	96.62 1.75	55.11 (lim = 1.50)	66.38 2.64	25.15 lim = (1.50)		
S105	123.75 3.36	36.81 (lim = 1.50)	125.30 6.00	20.88 (lim = 1.50)	73.37 11.10	6.61 lim = (1.50)		
S106	58.44 0.72	80.81 (lim = 1.50)	68.45 5.02	13.64 (lim = 1.50)	45.54 9.38	4.86 lim = (1.50)		
S107	195.75 2.29	85.41 (lim = 1.50)	183.72 2.23	82.34 (lim = 1.50)	96.05 3.44	27.93 lim = (1.50)		
S108	225.38 2.48	90.90 (lim = 1.50)	225.22 2.93	76.92 (lim = 1.50)	109.89 4.87	22.55 lim = (1.50)		
S109	156.41 1.96	79.77 (lim = 1.50)	152.48 4.51	33.80 (lim = 1.50)	88.05 8.52	10.33 lim = (1.50)		
S110	157.70 2.11	74.73 (lim = 1.50)	167.33 4.46	37.54 (lim = 1.50)	90.77 8.35	10.87 lim = (1.50)		
S111	143.85 2.10	68.58 (lim = 1.50)	142.35 3.39	42.02 (lim = 1.50)	80.14 5.67	14.12 lim = (1.50)		
S112	151.42 3.52	43.01 (lim = 1.50)	150.21 2.92	51.47 (lim = 1.50)	81.44 7.29	11.18 lim = (1.50)		
S113	127.34 2.20	57.88 (lim = 1.50)	143.53 1.90	75.66 (lim = 1.50)	74.56 3.56	20.97 lim = (1.50)		
S114	125.84 2.02	62.15 (lim = 1.50)	141.87 1.87	75.85 (lim = 1.50)	73.68 3.22	22.86 lim = (1.50)		
S115	89.44 3.99	22.42 (lim = 1.50)	89.59 4.34	20.66 (lim = 1.50)	56.84 10.33	5.50 lim = (1.50)		
S116	86.47 1.51	57.28 (lim = 1.50)	87.67 1.41	62.16 (lim = 1.50)	58.33 2.73	21.39 lim = (1.50)		
S117	3.82 0.38	10.15 (lim = 1.50)	3.88 0.77	5.02 (lim = 1.50)	4.73 1.26	3.74 lim = (1.50)		
S118	4.72 0.34	14.01 (lim = 1.50)	4.97 1.42	3.51 (lim = 1.50)	6.07 2.60	2.33 lim = (1.50)		
S119	3.82 0.38	10.15 (lim = 1.50)	3.88 0.77	5.02 (lim = 1.50)	4.73 1.26	3.74 lim = (1.50)		
S120	3.82 0.38	10.15 (lim = 1.50)	3.88 0.77	5.02 (lim = 1.50)	4.73 1.26	3.74 lim = (1.50)		
S121	4.72 0.34	14.01 (lim = 1.50)	4.97 1.42	3.51 (lim = 1.50)	6.07 2.60	2.33 lim = (1.50)		

S122	3.82 0.38	10.15 (lim = 1.50)	3.88 0.77	5.02 (lim = 1.50)	4.73 1.26	3.74 lim = (1.50)		
S123	241.99 2.64	91.83 (lim = 1.50)	221.93 3.11	71.37 (lim = 1.50)	108.29 4.84	22.38 lim = (1.50)		
S130	195.01 2.27	85.82 (lim = 1.50)	174.35 3.62	48.11 (lim = 1.50)	91.15 5.82	15.66 lim = (1.50)		
S131	168.53 2.76	61.00 (lim = 1.50)	167.40 3.81	43.95 (lim = 1.50)	87.51 7.17	12.21 lim = (1.50)		
S132	147.14 2.12	69.31 (lim = 1.50)	147.84 6.39	23.13 (lim = 1.50)	80.15 9.23	8.68 lim = (1.50)		
S133	161.36 1.92	83.94 (lim = 1.50)	141.74 6.39	22.18 (lim = 1.50)	76.84 8.99	8.55 lim = (1.50)		
S134	164.03 1.96	83.61 (lim = 1.50)	144.06 6.78	21.24 (lim = 1.50)	78.10 9.62	8.12 lim = (1.50)		
S135	83.50 2.72	30.66 (lim = 1.50)	83.52 5.66	14.77 (lim = 1.50)	53.16 10.47	5.08 lim = (1.50)		
S142	3.82 0.38	10.15 (lim = 1.50)	3.88 0.77	5.02 (lim = 1.50)	4.73 1.26	3.74 lim = (1.50)		
S143	4.72 0.34	14.01 (lim = 1.50)	4.97 1.42	3.51 (lim = 1.50)	6.07 2.60	2.33 lim = (1.50)		
S144	3.82 0.38	10.15 (lim = 1.50)	3.88 0.77	5.02 (lim = 1.50)	4.73 1.26	3.74 lim = (1.50)		
S145	3.82 0.38	10.15 (lim = 1.50)	3.88 0.77	5.02 (lim = 1.50)	4.73 1.26	3.74 lim = (1.50)		
S146	4.72 0.34	14.01 (lim = 1.50)	4.97 1.42	3.51 (lim = 1.50)	6.07 2.60	2.33 lim = (1.50)		
S147	3.82 0.38	10.15 (lim = 1.50)	3.88 0.77	5.02 (lim = 1.50)	4.73 1.26	3.74 lim = (1.50)		
S150	101.25 1.68	60.09 (lim = 1.50)	110.74 1.59	69.64 (lim = 1.50)	64.42 2.62	24.63 lim = (1.50)		
S153	53.01 1.59	33.27 (lim = 1.50)	54.85 2.41	22.79 (lim = 1.50)	42.25 1.93	21.95 lim = (1.50)		
S154	93.66 1.13	83.03 (lim = 1.50)	93.66 2.65	35.35 (lim = 1.50)	62.31 1.67	37.20 lim = (1.50)		
S155	90.27 1.75	51.51 (lim = 1.50)	92.63 2.12	43.63 (lim = 1.50)	62.20 2.17	28.64 lim = (1.50)		
S156	83.34 2.56	32.51 (lim = 1.50)	86.35 2.77	31.21 (lim = 1.50)	55.91 3.53	15.85 lim = (1.50)		
S157	81.28 4.29	18.94 (lim = 1.50)	84.05 1.93	43.44 (lim = 1.50)	54.08 7.40	7.31 lim = (1.50)		
S158	56.72 5.13	11.06 (lim = 1.50)	56.79 1.55	36.56 (lim = 1.50)	41.51 9.16	4.53 lim = (1.50)		
S159	82.47 5.18	15.91 (lim = 1.50)	84.68 1.39	60.85 (lim = 1.50)	54.87 9.17	5.99 lim = (1.50)		
S160	195.34 3.37	57.98 (lim = 1.50)	197.61 6.52	30.29 (lim = 1.50)	99.74 11.98	8.33 lim = (1.50)		
S164	110.84 1.62	68.29 (lim = 1.50)	110.40 2.46	44.91 (lim = 1.50)	67.60 4.04	16.74 lim = (1.50)		
S165	115.17 2.10	54.88 (lim = 1.50)	120.40 3.21	37.50 (lim = 1.50)	73.80 5.83	12.65 lim = (1.50)		
S169	114.93 2.96	38.87 (lim = 1.50)	114.45 6.19	18.50 (lim = 1.50)	67.01 11.38	5.89 lim = (1.50)		

S170	123.68 2.71	45.57 (lim = 1.50)	123.43 4.90	25.19 (lim = 1.50)	69.49 9.99	6.96 lim = (1.50)		
S171	165.47 2.06	80.36 (lim = 1.50)	165.85 3.12	53.09 (lim = 1.50)	86.70 7.10	12.22 lim = (1.50)		
S172	193.36 2.26	85.65 (lim = 1.50)	160.98 2.94	54.79 (lim = 1.50)	84.16 6.59	12.77 lim = (1.50)		
S173	222.41 2.53	88.07 (lim = 1.50)	183.16 3.06	59.86 (lim = 1.50)	92.45 7.03	13.14 lim = (1.50)		
S174	104.34 2.32	44.96 (lim = 1.50)	102.52 4.39	23.33 (lim = 1.50)	62.53 8.63	7.24 lim = (1.50)		
S175	106.57 1.60	66.60 (lim = 1.50)	101.74 3.97	25.65 (lim = 1.50)	64.75 3.04	21.33 lim = (1.50)		
S176	130.83 1.50	87.32 (lim = 1.50)	128.69 3.07	41.89 (lim = 1.50)	75.35 2.19	34.44 lim = (1.50)		
S177	195.97 2.87	68.26 (lim = 1.50)	180.50 3.39	53.21 (lim = 1.50)	94.36 3.27	28.88 lim = (1.50)		
S178	158.43 2.24	70.83 (lim = 1.50)	156.57 4.27	36.67 (lim = 1.50)	84.88 4.77	17.81 lim = (1.50)		
S179	189.20 3.82	49.54 (lim = 1.50)	170.94 3.82	44.76 (lim = 1.50)	89.37 6.01	14.86 lim = (1.50)		
S180	173.06 2.10	82.58 (lim = 1.50)	150.75 3.63	41.50 (lim = 1.50)	81.73 5.98	13.66 lim = (1.50)		
S181	200.11 6.55	30.54 (lim = 1.50)	199.71 3.77	52.96 (lim = 1.50)	101.01 13.51	7.47 lim = (1.50)		
S182	208.10 6.30	33.04 (lim = 1.50)	210.35 8.08	26.05 (lim = 1.50)	102.64 18.03	5.69 lim = (1.50)		
S183	54.26 1.16	46.81 (lim = 1.50)	56.64 2.36	24.04 (lim = 1.50)	43.84 1.61	27.26 lim = (1.50)		
S184	121.43 1.66	73.29 (lim = 1.50)	118.00 2.86	41.25 (lim = 1.50)	71.97 4.47	16.10 lim = (1.50)		
S185	130.67 1.69	77.26 (lim = 1.50)	116.09 4.31	26.92 (lim = 1.50)	67.97 7.37	9.22 lim = (1.50)		
S186	147.01 1.92	76.46 (lim = 1.50)	148.10 1.82	81.26 (lim = 1.50)	79.85 6.57	12.16 lim = (1.50)		
S187	197.42 2.32	85.26 (lim = 1.50)	165.57 3.09	53.64 (lim = 1.50)	86.56 5.40	16.03 lim = (1.50)		
S188	193.54 2.26	85.63 (lim = 1.50)	161.81 2.90	55.84 (lim = 1.50)	84.59 5.09	16.61 lim = (1.50)		
S189	72.01 0.62	115.62 (lim = 1.50)	73.67 1.21	61.11 (lim = 1.50)	49.01 1.47	33.34 lim = (1.50)		
S190	128.25 2.70	47.44 (lim = 1.50)	126.33 7.39	17.10 (lim = 1.50)	71.12 13.65	5.21 lim = (1.50)		
S191	97.49 1.16	83.82 (lim = 1.50)	84.77 0.70	121.49 (lim = 1.50)	54.44 2.92	18.64 lim = (1.50)		
S192	122.58 1.62	75.49 (lim = 1.50)	102.97 0.81	126.83 (lim = 1.50)	59.50 5.47	10.89 lim = (1.50)		
S193	61.10 1.65	37.08 (lim = 1.50)	49.12 0.55	88.59 (lim = 1.50)	42.59 1.34	31.66 lim = (1.50)		
S194	106.42 1.18	89.83 (lim = 1.50)	88.68 0.59	149.71 (lim = 1.50)	57.56 0.85	67.44 lim = (1.50)		
S195	5.38 0.58	9.33 (lim = 1.50)	5.39 0.18	29.45 (lim = 1.50)	6.59 1.00	6.60 lim = (1.50)		

S196	158.03 1.37	114.93 (lim = 1.50)	198.26 2.24	88.40 (lim = 1.50)	88.98 3.27	27.21 lim = (1.50)		
S197	118.11 1.99	59.50 (lim = 1.50)	116.06 2.87	40.48 (lim = 1.50)	70.79 2.81	25.18 lim = (1.50)		
S198	108.43 1.25	86.47 (lim = 1.50)	101.59 2.12	47.93 (lim = 1.50)	64.65 1.25	51.73 lim = (1.50)		
S199	272.08 2.51	108.23 (lim = 1.50)	242.98 3.27	74.32 (lim = 1.50)	114.73 3.50	32.79 lim = (1.50)		
S200	250.23 2.58	96.91 (lim = 1.50)	220.11 3.29	66.86 (lim = 1.50)	107.40 4.55	23.60 lim = (1.50)		
S201	226.76 6.04	37.53 (lim = 1.50)	227.45 3.33	68.35 (lim = 1.50)	107.07 10.51	10.19 lim = (1.50)		
S202	159.14 5.19	30.68 (lim = 1.50)	159.62 4.73	33.76 (lim = 1.50)	83.20 12.69	6.56 lim = (1.50)		
S203	119.53 1.63	73.55 (lim = 1.50)	110.34 1.59	69.32 (lim = 1.50)	67.50 2.59	26.03 lim = (1.50)		
S204	158.46 6.77	23.40 (lim = 1.50)	158.08 7.37	21.45 (lim = 1.50)	82.64 17.28	4.78 lim = (1.50)		
S205	204.97 4.89	41.95 (lim = 1.50)	235.61 2.56	92.03 (lim = 1.50)	100.01 10.42	9.60 lim = (1.50)		
S206	267.38 4.45	60.03 (lim = 1.50)	265.90 3.85	69.04 (lim = 1.50)	121.63 11.41	10.66 lim = (1.50)		
S207	125.54 6.42	19.54 (lim = 1.50)	137.41 8.78	15.65 (lim = 1.50)	68.06 10.70	6.36 lim = (1.50)		
S208	112.26 1.78	62.94 (lim = 1.50)	112.81 4.94	22.85 (lim = 1.50)	66.05 7.47	8.84 lim = (1.50)		
S209	191.92 2.24	85.79 (lim = 1.50)	168.19 4.57	36.79 (lim = 1.50)	87.93 6.99	12.58 lim = (1.50)		
S210	86.37 1.18	73.06 (lim = 1.50)	111.39 1.53	72.86 (lim = 1.50)	60.98 3.93	15.52 lim = (1.50)		
S211	57.89 2.02	28.65 (lim = 1.50)	57.66 6.85	8.42 (lim = 1.50)	40.08 13.62	2.94 lim = (1.50)		
S212	113.19 2.08	54.52 (lim = 1.50)	111.52 4.41	25.26 (lim = 1.50)	68.02 3.87	17.59 lim = (1.50)		
S213	167.11 1.59	104.99 (lim = 1.50)	159.53 5.79	27.56 (lim = 1.50)	86.49 5.14	16.84 lim = (1.50)		
S214	121.94 1.34	90.91 (lim = 1.50)	116.84 3.77	30.99 (lim = 1.50)	71.26 3.02	23.63 lim = (1.50)		
S215	172.33 1.86	92.70 (lim = 1.50)	151.20 1.34	113.15 (lim = 1.50)	88.53 2.09	42.38 lim = (1.50)		
S216	142.56 3.33	42.84 (lim = 1.50)	143.72 3.66	39.30 (lim = 1.50)	80.26 5.49	14.61 lim = (1.50)		
S217	78.16 1.80	43.36 (lim = 1.50)	68.05 1.66	40.93 (lim = 1.50)	52.01 3.98	13.07 lim = (1.50)		
S218	143.47 1.83	78.55 (lim = 1.50)	144.09 4.84	29.78 (lim = 1.50)	81.12 8.67	9.36 lim = (1.50)		
S219	84.44 1.26	66.76 (lim = 1.50)	69.26 0.63	109.22 (lim = 1.50)	52.47 1.20	43.79 lim = (1.50)		
S220	39.54 0.65	61.14 (lim = 1.50)	47.64 1.25	38.22 (lim = 1.50)	36.70 2.38	15.43 lim = (1.50)		
S221	59.25 0.81	72.72 (lim = 1.50)	69.46 1.41	49.17 (lim = 1.50)	48.41 1.31	36.86 lim = (1.50)		

S222	126.33 1.74	72.67 (lim = 1.50)	122.68 2.65	46.25 (lim = 1.50)	72.31 4.24	17.03 lim = (1.50)		
S223	85.77 2.52	34.06 (lim = 1.50)	89.03 2.20	40.42 (lim = 1.50)	58.14 6.17	9.43 lim = (1.50)		
S224	76.33 1.87	40.82 (lim = 1.50)	78.93 2.09	37.84 (lim = 1.50)	54.03 3.75	14.40 lim = (1.50)		
S225	59.09 1.44	41.07 (lim = 1.50)	61.36 3.79	16.19 (lim = 1.50)	43.25 2.19	19.72 lim = (1.50)		
S226	52.59 1.34	39.30 (lim = 1.50)	52.55 2.63	19.97 (lim = 1.50)	40.52 1.72	23.57 lim = (1.50)		
S227	42.11 1.15	36.61 (lim = 1.50)	39.90 2.55	15.67 (lim = 1.50)	34.35 2.96	11.61 lim = (1.50)		
S228	85.16 1.67	51.09 (lim = 1.50)	85.10 4.36	19.50 (lim = 1.50)	56.62 4.10	13.80 lim = (1.50)		
S229	131.42 1.35	97.36 (lim = 1.50)	127.86 5.83	21.92 (lim = 1.50)	74.87 5.12	14.62 lim = (1.50)		
S230	122.38 1.35	90.74 (lim = 1.50)	118.42 3.47	34.17 (lim = 1.50)	72.22 2.91	24.84 lim = (1.50)		
S231	218.96 2.10	104.13 (lim = 1.50)	227.16 6.92	32.83 (lim = 1.50)	107.35 6.04	17.78 lim = (1.50)		
S232	148.05 3.25	45.58 (lim = 1.50)	149.86 3.43	43.74 (lim = 1.50)	84.37 5.56	15.16 lim = (1.50)		
S233	117.17 3.31	35.40 (lim = 1.50)	122.33 7.35	16.64 (lim = 1.50)	68.60 10.80	6.35 lim = (1.50)		
S234	107.18 1.99	53.91 (lim = 1.50)	108.91 6.01	18.13 (lim = 1.50)	66.43 10.07	6.60 lim = (1.50)		
S235	34.96 1.30	26.85 (lim = 1.50)	37.10 1.97	18.88 (lim = 1.50)	31.94 2.99	10.69 lim = (1.50)		
S84-85	255.42 13.99	18.26 (lim = 1.50)	248.88 16.55	15.04 (lim = 1.50)	112.27 7.18	15.65 lim = (1.50)		
S102-103	250.02 5.96	41.93 (lim = 1.50)	201.87 18.35	11.00 (lim = 1.50)	105.53 9.81	10.76 lim = (1.50)		
SM1	58.79 18.44	3.19 (lim = 1.50)	92.02 2.68	34.28 (lim = 1.50)	37.42 6.27	5.97 lim = (1.50)		
SM2	58.79 18.44	3.19 (lim = 1.50)	92.02 2.68	34.28 (lim = 1.50)	37.42 6.27	5.97 lim = (1.50)		

Verificação de tensão em área reduzida

Nome	Interface pilar-fundação		
	Força solicitante (kN)	Força resistente (kN)	Condição
S1	131.47	2250.00	OK
S2	169.73	3712.50	OK
S3	158.14	3712.50	OK
S4	227.25	2250.00	OK
S5	273.73	2250.00	OK
S6	170.68	2250.00	OK
S7	120.18	2250.00	OK
S8	185.29	3712.50	OK
S9	214.22	2250.00	OK

S10	198.37	2250.00	OK
S11	144.71	2250.00	OK
S12	147.09	3712.50	OK
S13	234.70	1125.00	OK
S14	192.19	3712.50	OK
S15	271.15	1125.00	OK
S16	221.19	1125.00	OK
S17	81.40	3187.50	OK
S18	242.45	1125.00	OK
S19	218.87	2250.00	OK
S20	246.61	2250.00	OK
S21	187.17	2250.00	OK
S22	229.82	2250.00	OK
S23	281.33	2250.00	OK
S24	169.35	3712.50	OK
S25	239.96	2250.00	OK
S26	372.28	2250.00	OK
S27	170.27	2250.00	OK
S28	198.63	2250.00	OK
S29	190.08	2250.00	OK
S30	269.23	2250.00	OK
S31	214.28	2250.00	OK
S32	166.80	2250.00	OK
S33	245.45	2250.00	OK
S34	152.60	3712.50	OK
S35	203.03	2250.00	OK
S36	206.30	2250.00	OK
S37	217.03	2250.00	OK
S38	266.98	2250.00	OK
S39	213.11	2250.00	OK
S40	242.78	2250.00	OK
S41	169.99	2250.00	OK
S42	146.30	4000.00	OK
S43	148.26	4000.00	OK
S44	144.89	4000.00	OK
S45	165.41	2250.00	OK
S46	184.98	3712.50	OK
S47	131.02	2250.00	OK
S48	139.21	3712.50	OK
S49	175.50	2250.00	OK
S50	133.88	3712.50	OK
S51	140.81	2250.00	OK
S52	111.01	3562.50	OK
S53	153.89	2250.00	OK
S54	157.45	3712.50	OK
S55	231.70	2250.00	OK
S56	249.80	2250.00	OK
S57	171.51	3712.50	OK
S58	151.10	3712.50	OK
S59	187.05	3712.50	OK
S60	183.06	3712.50	OK

S61	129.00	2250.00	OK
S62	143.39	4000.00	OK
S63	46.65	2250.00	OK
S64	139.09	4000.00	OK
S65	224.72	2250.00	OK
S66	221.35	1125.00	OK
S67	130.09	2250.00	OK
S68	160.37	3712.50	OK
S69	200.98	2250.00	OK
S70	159.71	3712.50	OK
S71	151.52	2250.00	OK
S72	113.56	3562.50	OK
S73	154.79	2250.00	OK
S74	157.24	3712.50	OK
S75	164.51	2250.00	OK
S76	189.73	2250.00	OK
S77	189.65	3712.50	OK
S78	172.06	3712.50	OK
S79	217.29	3712.50	OK
S80	214.13	3712.50	OK
S81	167.55	2250.00	OK
S82	143.39	4000.00	OK
S83	46.65	2250.00	OK
S86	253.37	1125.00	OK
S87	370.74	2250.00	OK
S88	164.86	3712.50	OK
S89	348.44	2250.00	OK
S90	331.21	2250.00	OK
S91	209.55	2250.00	OK
S92	259.15	2250.00	OK
S93	252.08	2250.00	OK
S94	249.33	2250.00	OK
S95	293.02	2250.00	OK
S96	327.69	2250.00	OK
S97	249.63	2250.00	OK
S98	240.90	1125.00	OK
S99	237.56	1125.00	OK
S100	146.30	4000.00	OK
S101	148.26	4000.00	OK
S104	193.43	1125.00	OK
S105	237.80	2250.00	OK
S106	140.39	3712.50	OK
S107	320.12	2250.00	OK
S108	371.63	2250.00	OK
S109	274.46	2250.00	OK
S110	289.30	2250.00	OK
S111	285.86	2250.00	OK
S112	297.79	2250.00	OK
S113	264.85	2250.00	OK
S114	261.07	2250.00	OK
S115	191.46	2250.00	OK

S116	196.72	5831.58	OK
S117	9.66	2100.00	OK
S118	14.72	2100.00	OK
S119	9.66	2100.00	OK
S120	9.66	2100.00	OK
S121	14.72	2100.00	OK
S122	9.66	2100.00	OK
S123	368.71	2250.00	OK
S130	318.04	2250.00	OK
S131	322.08	2250.00	OK
S132	283.94	2250.00	OK
S133	268.72	2250.00	OK
S134	274.28	2250.00	OK
S135	175.26	2250.00	OK
S142	9.66	2100.00	OK
S143	14.72	2100.00	OK
S144	9.66	2100.00	OK
S145	9.66	2100.00	OK
S146	14.72	2100.00	OK
S147	9.66	2100.00	OK
S150	222.55	5831.58	OK
S153	101.06	2250.00	OK
S154	156.87	2250.00	OK
S155	168.46	2250.00	OK
S156	162.77	2250.00	OK
S157	170.74	2250.00	OK
S158	132.27	2250.00	OK
S159	179.64	2250.00	OK
S160	329.75	2250.00	OK
S164	226.69	2250.00	OK
S165	235.80	2250.00	OK
S169	223.86	2250.00	OK
S170	261.22	2250.00	OK
S171	329.11	2250.00	OK
S172	315.91	2250.00	OK
S173	353.30	2250.00	OK
S174	221.43	2250.00	OK
S175	174.83	2250.00	OK
S176	210.36	2250.00	OK
S177	292.50	2250.00	OK
S178	284.35	2250.00	OK
S179	323.48	2250.00	OK
S180	292.62	2250.00	OK
S181	341.51	2250.00	OK
S182	334.14	2250.00	OK
S183	139.79	2250.00	OK
S184	231.64	2250.00	OK
S185	236.56	2250.00	OK
S186	296.79	2250.00	OK
S187	323.99	2250.00	OK
S188	316.23	2250.00	OK

S189	174.06	3712.50	OK
S190	239.20	2250.00	OK
S191	195.10	3093.75	OK
S192	227.05	1125.00	OK
S193	118.24	3712.50	OK
S194	165.48	3712.50	OK
S195	12.74	2250.00	OK
S196	313.83	1125.00	OK
S197	192.65	2250.00	OK
S198	175.39	2250.00	OK
S199	351.76	2250.00	OK
S200	361.35	2250.00	OK
S201	383.76	2250.00	OK
S202	295.30	2250.00	OK
S203	227.47	2250.00	OK
S204	279.79	2250.00	OK
S205	357.97	2250.00	OK
S206	432.86	2250.00	OK
S207	229.23	2250.00	OK
S208	230.20	2250.00	OK
S209	312.77	2250.00	OK
S210	213.68	3712.50	OK
S211	124.03	2250.00	OK
S212	171.54	2250.00	OK
S213	222.53	2250.00	OK
S214	187.50	2250.00	OK
S215	260.05	1500.00	OK
S216	245.60	2250.00	OK
S217	174.29	3712.50	OK
S218	269.93	2250.00	OK
S219	176.44	3712.50	OK
S220	115.97	3562.50	OK
S221	131.22	3712.50	OK
S222	242.75	2250.00	OK
S223	184.62	2250.00	OK
S224	171.08	2250.00	OK
S225	137.99	2250.00	OK
S226	130.83	2250.00	OK
S227	107.05	6750.00	OK
S228	138.80	2250.00	OK
S229	188.62	2250.00	OK
S230	188.40	2250.00	OK
S231	299.16	2250.00	OK
S232	258.30	2250.00	OK
S233	221.36	2250.00	OK
S234	211.86	2250.00	OK
S235	96.02	2250.00	OK
S84-85	162.82	7425.00	OK
S102-103	144.89	13200.00	OK
SM1	86.73	27000.00	OK
SM2	86.73	27000.00	OK

Dimensionamento

Nome	Armaduras inferiores		Armaduras superiores	
	Dir. B	Dir. H	Dir. B	Dir. H
	Md (kN.m/m) As (cm ² /m)	Md (kN.m/m) As (cm ² /m)	Md (kN.m/m) A's (cm ² /m)	Md (kN.m/m) A's (cm ² /m)
S1	52.87 6.08	52.87 6.08	0.00 0.00	0.00 0.00
S2	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S3	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S4	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S5	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S6	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S7	52.87 6.08	52.87 6.08	0.00 0.00	0.00 0.00
S8	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S9	49.96 5.75	49.96 5.75	0.00 0.00	0.00 0.00
S10	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S11	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S12	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S13	38.58 5.18	36.60 4.91	0.00 0.00	0.00 0.00
S14	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S15	48.94 5.63	46.14 5.31	0.00 0.00	0.00 0.00
S16	38.58 5.18	36.60 4.91	0.00 0.00	0.00 0.00
S17	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S18	38.41 5.15	36.48 4.89	0.00 0.00	0.00 0.00
S19	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S20	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S21	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S22	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00

S23	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00
S24	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S25	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S26	48.33 5.56	48.33 5.56	0.00 0.00	0.00 0.00
S27	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S28	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S29	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S30	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S31	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S32	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S33	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S34	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S35	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S36	49.96 5.75	49.96 5.75	0.00 0.00	0.00 0.00
S37	49.96 5.75	49.96 5.75	0.00 0.00	0.00 0.00
S38	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S39	49.96 5.75	49.96 5.75	0.00 0.00	0.00 0.00
S40	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S41	49.96 5.75	49.96 5.75	0.00 0.00	0.00 0.00
S42	83.07 7.43	83.07 7.43	0.00 0.00	0.00 0.00
S43	83.07 7.43	83.07 7.43	0.00 0.00	0.00 0.00
S44	83.07 7.43	83.07 7.43	0.00 0.00	0.00 0.00
S45	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S46	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S47	52.87 6.08	52.87 6.08	0.00 0.00	0.00 0.00
S48	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00

S49	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S50	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S51	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S52	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S53	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S54	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S55	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S56	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S57	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S58	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S59	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S60	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S61	52.87 6.08	52.87 6.08	0.00 0.00	0.00 0.00
S62	83.07 7.43	83.07 7.43	0.00 0.00	0.00 0.00
S63	56.85 7.63	56.85 7.63	0.00 0.00	0.00 0.00
S64	83.57 7.47	83.57 7.47	0.00 0.00	0.00 0.00
S65	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S66	36.60 4.91	38.41 5.15	0.00 0.00	0.00 0.00
S67	52.87 6.08	52.87 6.08	0.00 0.00	0.00 0.00
S68	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S69	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S70	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S71	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S72	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S73	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S74	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00

S75	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S76	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S77	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S78	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S79	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S80	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S81	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S82	83.07 7.43	83.07 7.43	0.00 0.00	0.00 0.00
S83	56.85 7.63	56.85 7.63	0.00 0.00	0.00 0.00
S86	46.14 5.31	48.72 5.60	0.00 0.00	0.00 0.00
S87	48.33 5.56	48.33 5.56	0.00 0.00	0.00 0.00
S88	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S89	48.33 5.56	48.33 5.56	0.00 0.00	0.00 0.00
S90	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S91	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S92	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S93	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S94	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S95	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00
S96	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S97	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S98	76.82 6.87	72.36 6.47	0.00 0.00	0.00 0.00
S99	77.21 6.91	72.64 6.50	0.00 0.00	0.00 0.00
S100	86.35 7.72	84.46 7.55	0.00 0.00	0.00 0.00
S101	83.57 7.47	82.60 7.39	0.00 0.00	0.00 0.00
S104	36.73 4.93	38.58 5.18	0.00 0.00	0.00 0.00

S105	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S106	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S107	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S108	48.33 5.56	48.33 5.56	0.00 0.00	0.00 0.00
S109	76.82 6.87	76.82 6.87	0.00 0.00	0.00 0.00
S110	74.79 6.69	74.79 6.69	0.00 0.00	0.00 0.00
S111	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S112	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00
S113	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S114	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S115	49.96 5.75	49.96 5.75	0.00 0.00	0.00 0.00
S116	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S117	35.77 5.76	35.77 6.40	0.00 0.00	0.00 0.00
S118	35.77 5.76	35.77 6.40	0.00 4.50	0.26 4.50
S119	35.77 5.76	35.77 6.40	0.00 0.00	0.00 0.00
S120	35.77 5.76	35.77 6.40	0.00 0.00	0.00 0.00
S121	35.77 5.76	35.77 6.40	0.00 4.50	0.26 4.50
S122	35.77 5.76	35.77 6.40	0.00 0.00	0.00 0.00
S123	73.71 6.59	73.71 6.59	0.00 0.00	0.00 0.00
S130	74.41 6.66	74.41 6.66	0.00 0.00	0.00 0.00
S131	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S132	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00
S133	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00
S134	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00
S135	49.96 5.75	49.96 5.75	0.00 0.00	0.00 0.00
S142	35.77 5.76	35.77 6.40	0.00 0.00	0.00 0.00

S143	35.77 5.76	35.77 6.40	0.00 4.50	0.26 4.50
S144	35.77 5.76	35.77 6.40	0.00 0.00	0.00 0.00
S145	35.77 5.76	35.77 6.40	0.00 0.00	0.00 0.00
S146	35.77 5.76	35.77 6.40	0.00 4.50	0.26 4.50
S147	35.77 5.76	35.77 6.40	0.00 0.00	0.00 0.00
S150	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S153	52.87 6.08	52.87 6.08	0.00 0.00	0.00 0.00
S154	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S155	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S156	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S157	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S158	52.87 6.08	52.55 6.04	0.00 0.00	0.00 0.00
S159	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S160	48.52 5.58	48.52 5.58	0.00 0.00	0.00 0.00
S164	77.62 6.94	77.62 6.94	0.00 0.00	0.00 0.00
S165	77.62 6.94	77.62 6.94	0.00 0.00	0.00 0.00
S169	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S170	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S171	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S172	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S173	48.52 5.58	48.52 5.58	0.00 0.00	0.00 0.00
S174	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S175	49.96 5.75	49.96 5.75	0.00 0.00	0.00 0.00
S176	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S177	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S178	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00

S179	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S180	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00
S181	48.52 5.58	48.52 5.58	0.00 0.00	0.00 0.00
S182	48.33 5.56	48.33 5.56	0.00 0.00	0.00 0.00
S183	52.87 6.08	52.87 6.08	0.00 0.00	0.00 0.00
S184	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S185	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S186	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00
S187	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S188	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S189	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S190	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S191	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S192	36.73 4.93	38.58 5.18	0.00 0.00	0.00 0.00
S193	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S194	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S195	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S196	48.52 5.58	45.85 5.27	0.00 0.00	0.00 0.00
S197	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S198	49.96 5.75	49.96 5.75	0.00 0.00	0.00 0.00
S199	60.05 6.04	60.05 6.04	0.00 0.00	0.00 0.00
S200	48.33 5.56	48.33 5.56	0.00 0.00	0.00 0.00
S201	60.05 6.04	60.05 6.04	0.00 0.00	0.00 0.00
S202	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S203	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S204	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00

S205	48.33 5.56	48.33 5.56	0.00 0.00	0.00 0.00
S206	59.82 6.02	59.82 6.02	0.00 0.00	0.00 0.00
S207	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00
S208	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S209	48.72 5.60	48.72 5.60	0.00 0.00	0.00 0.00
S210	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S211	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S212	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S213	48.94 5.63	48.94 5.63	0.00 0.00	0.00 0.00
S214	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S215	37.07 4.97	38.25 5.13	0.00 0.00	0.00 0.00
S216	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S217	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S218	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S219	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S220	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S221	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S222	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S223	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S224	50.60 5.82	50.60 5.82	0.00 0.00	0.00 0.00
S225	50.95 5.86	50.95 5.86	0.00 0.00	0.00 0.00
S226	52.87 6.08	52.87 6.08	0.00 0.00	0.00 0.00
S227	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S228	50.27 5.78	50.27 5.78	0.00 0.00	0.00 0.00
S229	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S230	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00

S231	48.33 5.56	48.33 5.56	0.00 0.00	0.00 0.00
S232	49.17 5.65	49.17 5.65	0.00 0.00	0.00 0.00
S233	49.41 5.68	49.41 5.68	0.00 0.00	0.00 0.00
S234	49.68 5.71	49.68 5.71	0.00 0.00	0.00 0.00
S235	53.60 6.16	53.60 6.16	0.00 0.00	0.00 0.00
S84-85	120.22 9.68	120.22 9.68	0.00 8.25	0.00 8.25
S102-103	143.07 10.47	143.07 10.47	0.00 9.00	0.00 9.00
SM1	35.77 5.76	35.77 5.76	1.21 4.50	0.00 4.50
SM2	35.77 5.76	35.77 5.76	1.21 4.50	0.00 4.50

6. RESULTADOS DOS PILARES DO EDIFÍCIO PRINCIPAL:

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	le b vín c le b vín c (cm)	Nd máx Nd mín (kN)	MBd topo MBd base (kN.m)	MHd topo MHd base (kN.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	131.47 79.06	3.96 2.57	4.68 3.63	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P2 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	169.73 101.62	0.26 0.22	3.87 2.85	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P3 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	158.14 94.63	0.51 0.36	3.59 2.58	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P4 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	227.25 134.73	4.09 4.00	6.30 3.85	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P5 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	273.73 159.15	4.82 2.87	2.30 3.52	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P6 1:20	30.00 X 30.00	15.00 150.00	150.00 RR	170.68 101.09	1.10 1.33	4.20 3.72	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30

			150.00 RR						
P7 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	120.18 70.90	2.72 1.79	7.19 3.77	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P8 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	185.29 119.61	2.26 1.27	5.78 3.62	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P9 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	214.22 137.57	7.37 3.90	4.40 3.41	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P10 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	198.37 127.52	7.93 5.36	7.25 5.61	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P11 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	144.71 91.96	11.54 5.61	4.06 3.15	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P12 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	147.09 89.64	0.73 0.47	2.73 1.70	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P13 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	234.70 129.79	0.34 0.27	2.86 1.54	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P14 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	192.19 107.71	0.26 0.22	2.86 1.61	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P15 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	271.15 143.64	0.28 0.24	2.22 1.20	2.45 2 ø 12.5 3.68 3 ø 12.5 1.6 6 ø 12.5	ø 5.0 c/15	34.60 17.30
P16 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	221.19 119.12	1.19 0.70	2.56 1.55	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	34.60 17.30
P17 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	81.40 43.18	2.75 1.64	0.95 0.90	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P18 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	242.45 150.06	2.07 1.13	5.05 2.74	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	34.60 17.30
P19 1:20	30.00 X	20.00 150.00	150.00 RR	218.87 137.02	7.16 4.39	4.03 2.79	2.45 2 ø 12.5 2.45 2 ø 12.5	ø 5.0 c/15	17.30 17.30

	30.00		150.00 RR				0.5 4 ø 12.5		
P20 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	246.61 153.84	6.46 3.89	5.54 2.52	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P21 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	187.17 121.76	1.58 1.49	8.54 5.11	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P22 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	229.82 140.93	16.02 8.56	4.07 3.50	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P23 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	281.33 159.78	11.95 6.58	2.20 2.40	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P24 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	169.35 94.79	0.56 0.41	3.05 2.14	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P25 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	239.96 131.39	2.78 2.73	2.17 2.17	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P26 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	372.28 208.00	2.27 2.16	8.25 7.21	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P27 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	170.27 92.34	7.36 4.05	2.97 2.97	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P28 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	198.63 110.72	1.24 1.69	4.05 3.13	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P29 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	190.08 115.66	2.73 1.66	3.95 3.00	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P30 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	269.23 169.45	3.99 3.22	9.98 5.30	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P31 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	214.28 139.59	16.28 9.39	1.93 2.20	3.68 3 ø 12.5 3.68 3 ø 12.5 1.1 8 ø 12.5	ø 5.0 c/15	17.30 17.30
P32 1:20	30.00 X	15.00 150.00	150.00 RR	166.80 101.08	15.34 8.04	6.45 3.96	2.45 2 ø 12.5 2.45 2 ø 12.5	ø 5.0 c/10	17.30 17.30

	30.00		150.00 RR				0.5 4 ø 12.5		
P33 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	245.45 147.44	11.82 6.62	2.31 1.86	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P34 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	152.60 90.23	0.52 0.37	2.96 1.82	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P35 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	203.03 119.08	2.87 2.20	2.11 2.00	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P36 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	206.30 126.65	1.64 1.84	5.82 1.94	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P37 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	217.03 126.15	6.14 3.54	2.41 2.71	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P38 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	266.98 160.30	11.07 6.26	1.54 1.92	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P39 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	213.11 136.07	7.59 4.43	3.33 2.60	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P40 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	242.78 156.46	15.38 8.73	4.14 2.79	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P41 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	169.99 108.87	22.65 10.97	3.89 2.64	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/10	17.30 17.30
P42 1:20	40.00 X 40.00	20.00 300.00	300.00 RR 300.00 RR	146.30 90.10	8.60 6.23	10.80 5.56	4.02 2 ø 16.0 4.02 2 ø 16.0 0.5 4 ø 16.0	ø 5.0 c/19	25.95 25.95
P43 1:20	40.00 X 40.00	20.00 250.00	1600.00 EL 250.00 RR	148.26 95.63	10.24 9.98	0.80 2.04	4.02 2 ø 16.0 4.02 2 ø 16.0 0.5 4 ø 16.0	ø 5.0 c/19	138.40 21.63
P44 1:20	40.00 X 40.00	20.00 250.00	250.00 RR 250.00 RR	144.89 91.21	9.05 6.68	10.87 6.16	4.02 2 ø 16.0 4.02 2 ø 16.0 0.5 4 ø 16.0	ø 5.0 c/19	21.63 21.63
P45 1:20	30.00 X	15.00 250.00	250.00 RR	165.41 104.83	11.78 5.72	6.35 4.74	2.45 2 ø 12.5 2.45 2 ø 12.5	ø 5.0 c/15	28.83 28.83

	30.00		250.00 RR				0.5 4 ø 12.5		
P46 1:20	15.00 X 30.00	20.00 200.00	200.00 RR 200.00 RR	184.98 122.27	1.88 1.03	6.45 3.87	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	46.13 23.07
P47 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	131.02 81.77	2.49 1.64	4.47 3.77	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P48 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	139.21 90.19	0.45 0.38	3.65 2.50	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P49 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	175.50 112.40	1.93 1.45	3.94 3.83	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P50 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	133.88 86.90	0.89 0.58	5.38 3.57	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P51 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	140.81 90.01	1.10 1.53	10.37 7.12	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P52 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	111.01 72.89	4.25 2.30	1.16 0.87	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P53 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	153.89 98.61	1.56 1.72	8.12 5.56	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P54 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	157.45 103.08	0.34 0.25	10.33 5.70	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P55 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	231.70 139.10	1.40 1.67	4.97 4.01	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P56 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	249.80 145.21	5.49 3.30	1.15 1.93	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P57 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	171.51 103.04	1.13 0.70	3.87 2.54	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P58 1:20	15.00 X	20.00 150.00	150.00 RR	151.10 89.68	0.75 0.47	4.03 2.62	1.57 2 ø 10.0 1.57 2 ø 10.0	ø 5.0 c/12	34.60 17.30

	30.00		150.00 RR				0.7 4 ø 10.0		
P59 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	187.05 111.10	0.32 0.29	3.57 2.39	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P60 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	183.06 108.91	0.29 0.26	3.64 2.41	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P61 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	129.00 76.73	4.48 3.11	5.06 3.77	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P62 1:20	40.00 X 40.00	20.00 300.00	300.00 RR 300.00 RR	143.39 89.86	1.60 2.20	15.22 9.92	4.02 2 ø 16.0 4.02 2 ø 16.0 0.5 4 ø 16.0	ø 5.0 c/19	25.95 25.95
P63 1:20	30.00 X 30.00	20.00 250.00	500.00 EL 250.00 RR	46.65 27.61	0.13 1.13	2.95 2.77	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	57.67 28.83
P64 1:20	40.00 X 40.00	20.00 250.00	250.00 RR 250.00 RR	139.09 88.73	1.37 1.88	16.62 6.16	4.02 2 ø 16.0 4.02 2 ø 16.0 0.5 4 ø 16.0	ø 5.0 c/19	21.63 21.63
P65 1:20	30.00 X 30.00	15.00 250.00	250.00 RR 250.00 RR	224.72 142.51	9.95 5.14	5.17 3.14	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	28.83 28.83
P66 1:20	15.00 X 30.00	20.00 200.00	200.00 RR 200.00 RR	221.35 137.26	3.00 1.62	6.35 3.39	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	46.13 23.07
P67 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	130.09 76.75	2.11 1.96	4.18 2.87	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P68 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	160.37 96.60	0.29 0.24	3.29 1.96	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P69 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	200.98 119.87	2.49 2.11	3.10 1.96	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P70 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	159.71 96.32	1.00 0.60	5.49 2.83	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P71 1:20	30.00 X	15.00 150.00	150.00 RR	151.52 92.05	1.70 1.74	10.61 5.35	2.45 2 ø 12.5 2.45 2 ø 12.5	ø 5.0 c/15	17.30 17.30

	30.00		150.00 RR				0.5 4 ø 12.5		
P72 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	113.56 69.69	4.10 2.11	0.80 0.77	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P73 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	154.79 92.36	1.33 1.55	8.36 4.66	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P74 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	157.24 97.72	0.35 0.29	10.13 5.42	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P75 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	164.51 96.02	2.34 1.88	7.95 4.25	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P76 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	189.73 104.08	5.95 3.04	4.32 2.83	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P77 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	189.65 106.33	1.21 0.80	3.61 2.13	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P78 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	172.06 96.05	0.62 0.34	3.70 2.16	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P79 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	217.29 121.00	0.41 0.39	3.22 1.93	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P80 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	214.13 119.42	0.49 0.43	3.32 1.98	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P81 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	167.55 100.53	3.93 3.33	2.99 2.11	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P82 1:20	40.00 X 40.00	20.00 300.00	300.00 RR 300.00 RR	143.39 89.86	1.60 2.20	15.22 9.92	4.02 2 ø 16.0 4.02 2 ø 16.0 0.5 4 ø 16.0	ø 5.0 c/19	25.95 25.95
P83 1:20	30.00 X 30.00	20.00 250.00	250.00 RR 500.00 EL	46.65 27.61	2.95 2.77	0.13 1.13	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	28.83 57.67
P84 1:20	40.00 X	20.00 250.00	250.00 RR	139.09 88.73	1.37 1.88	16.62 6.16	4.02 2 ø 16.0 4.02 2 ø 16.0	ø 5.0 c/19	21.63 21.63

	40.00		250.00 RR				0.5 4 ø 16.0		
P85 1:20	30.00 X 30.00	20.00 250.00	250.00 RR 250.00 RR	162.82 100.04	2.61 2.00	7.78 5.45	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	28.83 28.83
P86 1:20	15.00 X 30.00	20.00 250.00	250.00 RR 250.00 RR	253.37 147.39	4.72 2.59	4.56 2.66	1.57 2 ø 10.0 3.14 4 ø 10.0 1.4 8 ø 10.0	ø 5.0 c/12	57.67 28.83
P87 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	370.74 220.04	12.19 6.82	7.38 3.29	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P88 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	164.86 101.94	1.73 1.13	12.73 6.84	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P89 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 575.00 RR	348.44 203.44	9.34 4.36	5.36 7.61	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 66.32
P90 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	331.21 192.36	4.80 3.82	8.00 5.13	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P91 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 575.00 RR	209.55 122.70	1.08 1.73	3.41 7.54	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 66.32
P92 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 575.00 RR	259.15 151.43	2.60 2.82	3.37 7.50	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 66.32
P93 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	252.08 144.41	2.16 1.25	10.97 6.41	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P94 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	249.33 133.04	2.09 1.85	10.76 6.33	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P95 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	293.02 158.83	11.73 6.32	2.38 1.99	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P96 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	327.69 181.56	4.87 3.50	1.59 1.58	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P97 1:20	30.00 X	15.00 150.00	150.00 RR	249.63 148.60	7.32 4.53	7.68 5.19	2.45 2 ø 12.5 2.45 2 ø 12.5	ø 5.0 c/15	17.30 17.30

	30.00		150.00 RR				0.5 4 ø 12.5		
P98 1:20	15.00 X 30.00	20.00 150.00	570.00 RR 150.00 RR	240.90 127.05	0.09 0.25	1.30 1.24	4.02 2 ø 16.0 8.04 4 ø 16.0 3.6 8 ø 16.0	ø 5.0 c/15	131.48 17.30
P99 1:20	15.00 X 30.00	20.00 150.00	570.00 RR 150.00 RR	237.56 125.39	0.08 0.19	1.33 1.22	4.02 2 ø 16.0 8.04 4 ø 16.0 3.6 8 ø 16.0	ø 5.0 c/15	131.48 17.30
P100 1:20	40.00 X 40.00	20.00 300.00	300.00 RR 300.00 RR	146.30 90.10	8.60 6.23	10.80 5.56	4.02 2 ø 16.0 4.02 2 ø 16.0 0.5 4 ø 16.0	ø 5.0 c/19	25.95 25.95
P101 1:20	40.00 X 40.00	20.00 250.00	250.00 RR 1600.00 EL	148.26 95.63	0.80 2.04	10.24 9.98	4.02 2 ø 16.0 4.02 2 ø 16.0 0.5 4 ø 16.0	ø 5.0 c/19	21.63 138.40
P102 1:20	40.00 X 40.00	20.00 250.00	250.00 RR 250.00 RR	144.89 91.21	9.05 6.68	10.87 6.16	4.02 2 ø 16.0 4.02 2 ø 16.0 0.5 4 ø 16.0	ø 5.0 c/19	21.63 21.63
P103 1:20	30.00 X 30.00	20.00 250.00	250.00 RR 250.00 RR	120.05 72.79	2.08 1.58	10.22 5.64	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	28.83 28.83
P104 1:20	15.00 X 30.00	20.00 250.00	250.00 RR 250.00 RR	193.43 124.53	4.55 2.35	4.17 2.36	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	57.67 28.83
P105 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	237.80 153.86	12.43 7.83	7.91 4.22	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P106 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	140.39 94.01	1.47 0.93	12.45 6.73	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P107 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	320.12 203.27	0.84 1.23	4.44 2.70	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P108 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	371.63 238.78	4.92 3.01	3.70 3.34	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P109 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	274.46 173.30	1.59 1.33	12.73 6.02	6.03 3 ø 16.0 6.03 3 ø 16.0 1.8 8 ø 16.0	ø 5.0 c/19	17.30 17.30
P110 1:20	30.00 X	20.00 150.00	150.00 RR	289.30 182.44	12.40 5.94	2.95 2.60	6.03 3 ø 16.0 6.03 3 ø 16.0	ø 5.0 c/19	17.30 17.30

	30.00		150.00 RR				1.8 8 ø 16.0		
P111 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	285.86 172.30	4.38 2.66	5.42 4.00	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P112 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	297.79 172.33	8.27 4.57	5.11 3.46	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P113 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	264.85 158.25	3.87 2.62	1.88 2.11	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P114 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	261.07 155.57	3.51 2.46	1.73 1.96	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P115 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	191.46 115.52	9.60 5.22	10.93 5.69	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/10	17.30 17.30
P116 1:20	Circ 0.00 30.00	20.00 150.00	150.00 RR	196.72 122.13	2.96 1.94	1.81 1.67	4.71 6 ø 10.0 0.7	ø 5.0 c/12	20.00
P117 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	9.66 4.96	0.09 0.40	0.65 0.92	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P118 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	14.72 8.25	0.02 0.34	1.74 1.86	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P119 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	9.66 4.96	0.09 0.40	0.65 0.92	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P120 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	9.66 4.96	0.09 0.40	0.65 0.92	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P121 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	14.72 8.25	0.02 0.34	1.74 1.86	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P122 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	9.66 4.96	0.09 0.40	0.65 0.92	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P123 1:20	30.00 X	20.00 150.00	150.00 RR	368.71 233.42	2.96 1.72	4.96 3.59	6.03 3 ø 16.0 6.03 3 ø 16.0	ø 5.0 c/19	17.30 17.30

	30.00		150.00 RR				1.8 8 ø 16.0		
P130 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	318.04 194.34	3.40 1.77	6.07 4.31	6.03 3 ø 16.0 6.03 3 ø 16.0 1.8 8 ø 16.0	ø 5.0 c/19	17.30 17.30
P131 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	322.08 185.30	6.31 3.55	6.32 4.71	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P132 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	283.94 166.45	3.29 2.65	9.89 8.41	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P133 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	268.72 156.95	9.74 8.41	1.73 1.59	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P134 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	274.28 160.48	0.90 1.20	10.61 8.97	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P135 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	175.26 105.29	5.60 3.48	12.82 7.53	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/10	17.30 17.30
P142 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	9.66 4.96	0.09 0.40	0.65 0.92	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P143 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	14.72 8.25	0.02 0.34	1.74 1.86	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P144 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	9.66 4.96	0.09 0.40	0.65 0.92	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P145 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	9.66 4.96	0.09 0.40	0.65 0.92	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P146 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	14.72 8.25	0.02 0.34	1.74 1.86	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P147 1:20	14.00 X 30.00	20.00 100.00	150.00 RR 150.00 RR	9.66 4.96	0.09 0.40	0.65 0.92	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	37.07 17.30
P150 1:20	Circ 0.00	20.00 150.00	150.00 RR	222.55 139.79	3.43 2.18	0.75 1.13	4.71 6 ø 10.0	ø 5.0 c/12	20.00

	30.00						0.7		
P153 1:20	30.00 X 30.00	15.00 300.00	300.00 RR 300.00 RR	101.06 57.59	3.55 2.11	2.39 2.72	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	34.60 34.60
P154 1:20	30.00 X 30.00	15.00 300.00	300.00 RR 300.00 RR	156.87 96.27	0.75 0.68	2.83 3.03	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	34.60 34.60
P155 1:20	30.00 X 30.00	15.00 250.00	250.00 RR 250.00 RR	168.46 106.45	3.58 2.24	2.28 2.35	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	28.83 28.83
P156 1:20	30.00 X 30.00	15.00 200.00	200.00 RR 200.00 RR	162.77 103.50	5.15 3.24	3.22 3.28	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	23.07 23.07
P157 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	170.74 110.20	9.17 5.47	1.77 2.15	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P158 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	132.27 82.35	11.67 6.63	1.24 1.65	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P159 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	179.64 115.96	11.65 6.72	0.85 1.44	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P160 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	329.75 211.32	14.63 8.82	6.86 4.22	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P164 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	226.69 142.85	1.98 1.77	6.17 3.33	6.03 3 ø 16.0 6.03 3 ø 16.0 1.8 8 ø 16.0	ø 5.0 c/19	17.30 17.30
P165 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	235.80 149.80	2.99 2.50	7.98 4.18	6.03 3 ø 16.0 6.03 3 ø 16.0 1.8 8 ø 16.0	ø 5.0 c/19	17.30 17.30
P169 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	223.86 138.15	6.30 3.85	14.13 8.32	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P170 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	261.22 143.19	6.44 3.50	12.34 6.43	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P171 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	329.11 181.99	3.01 2.47	10.10 3.88	2.45 2 ø 12.5 2.45 2 ø 12.5	ø 5.0 c/15	17.30 17.30

	30.00		150.00 RR				0.5 4 ø 12.5		
P172 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	315.91 174.90	1.35 1.24	9.78 3.63	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P173 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	353.30 193.17	1.41 1.59	10.55 3.81	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P174 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	221.43 130.79	4.39 2.93	10.44 5.56	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P175 1:20	30.00 X 30.00	15.00 300.00	725.00 RR 300.00 RR	174.83 107.01	1.62 1.98	6.65 4.86	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	83.62 34.60
P176 1:20	30.00 X 30.00	15.00 300.00	725.00 RR 300.00 RR	210.36 123.87	1.71 1.86	4.10 3.68	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	83.62 34.60
P177 1:20	30.00 X 30.00	15.00 250.00	675.00 RR 250.00 RR	292.50 171.85	2.03 3.67	5.32 4.03	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	77.85 28.83
P178 1:20	30.00 X 30.00	15.00 200.00	625.00 RR 200.00 RR	284.35 166.76	2.06 2.89	6.88 5.29	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	72.08 23.07
P179 1:20	30.00 X 30.00	15.00 150.00	575.00 RR 150.00 RR	323.48 190.37	1.33 4.87	6.24 4.68	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	66.32 17.30
P180 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	292.62 173.14	1.52 1.14	7.08 4.45	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P181 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	341.51 217.85	17.39 8.77	7.06 4.68	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P182 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	334.14 215.12	16.07 8.46	18.60 10.78	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/10	17.30 17.30
P183 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 575.00 RR	139.79 87.62	1.16 1.30	3.35 2.68	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 66.32
P184 1:20	30.00 X	20.00 150.00	150.00 RR	231.64 140.03	1.73 1.53	5.46 3.46	2.45 2 ø 12.5 2.45 2 ø 12.5	ø 5.0 c/15	17.30 17.30

	30.00		150.00 RR				0.5 4 ø 12.5		
P185 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	236.56 141.98	1.56 1.33	9.61 5.59	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P186 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	296.79 167.59	2.83 2.30	11.79 1.94	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P187 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	323.99 181.26	0.70 0.99	7.06 3.82	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P188 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	316.23 176.01	6.70 3.58	1.32 1.16	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P189 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	174.06 102.79	0.61 0.41	1.26 1.42	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P190 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	239.20 147.66	6.23 3.50	16.50 9.74	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/10	17.30 17.30
P191 1:20	15.00 X 25.00	20.00 150.00	150.00 RR 150.00 RR	195.10 116.25	0.55 0.50	4.76 1.18	1.57 2 ø 10.0 1.57 2 ø 10.0 0.8 4 ø 10.0	ø 5.0 c/12	34.60 20.76
P192 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	227.05 125.85	0.50 0.25	10.66 1.24	1.57 2 ø 10.0 2.36 3 ø 10.0 1.0 6 ø 10.0	ø 5.0 c/12	34.60 17.30
P193 1:20	15.00 X 30.00	20.00 300.00	300.00 RR 300.00 RR	118.24 67.43	0.92 0.67	3.27 2.22	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	69.20 34.60
P194 1:20	15.00 X 30.00	20.00 300.00	300.00 RR 300.00 RR	165.48 92.37	0.56 0.45	2.00 1.13	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	69.20 34.60
P195 1:20	15.00 X 25.00	20.00 150.00	300.00 EL 150.00 RR	12.74 7.62	0.13 0.21	2.44 0.75	1.57 2 ø 10.0 1.57 2 ø 10.0 0.8 4 ø 10.0	ø 5.0 c/12	69.20 20.76
P196 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	313.83 192.21	4.00 1.85	3.16 1.08	2.45 2 ø 12.5 3.68 3 ø 12.5 1.6 6 ø 12.5	ø 5.0 c/15	34.60 17.30
P197 1:20	30.00 X	15.00 300.00	300.00 RR	192.65 117.58	3.84 2.62	5.58 3.31	2.45 2 ø 12.5 2.45 2 ø 12.5	ø 5.0 c/15	34.60 34.60

	30.00		300.00 RR				0.5 4 ø 12.5		
P198 1:20	30.00 X 30.00	15.00 300.00	300.00 RR 725.00 RR	175.39 105.99	1.43 1.39	2.64 2.58	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	34.60 83.62
P199 1:20	30.00 X 30.00	20.00 250.00	250.00 RR 250.00 RR	351.76 206.92	3.63 2.81	6.35 4.05	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	28.83 28.83
P200 1:20	30.00 X 30.00	20.00 200.00	200.00 RR 200.00 RR	361.35 212.49	2.75 1.38	7.86 4.14	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	23.07 23.07
P201 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	383.76 226.52	10.54 7.75	7.50 4.24	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P202 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	295.30 172.82	14.20 6.74	10.62 6.21	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/10	17.30 17.30
P203 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	227.47 143.83	3.35 1.71	1.83 1.71	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P204 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	279.79 169.58	15.23 9.59	18.54 9.79	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/10	17.30 17.30
P205 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 575.00 RR	357.97 208.77	15.13 6.45	2.52 2.11	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 66.32
P206 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	432.86 261.81	15.45 6.05	7.31 4.74	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P207 1:20	30.00 X 30.00	20.00 150.00	570.00 RR 150.00 RR	229.23 135.61	5.85 12.10	13.00 8.77	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/10	65.74 17.30
P208 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	230.20 134.24	1.19 2.23	8.65 6.37	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P209 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	312.77 183.38	4.07 1.41	7.53 5.87	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P210 1:20	15.00 X	20.00 150.00	150.00 RR	213.68 130.05	2.69 1.59	5.80 1.59	1.57 2 ø 10.0 1.57 2 ø 10.0	ø 5.0 c/12	34.60 17.30

	30.00		150.00 RR				0.7 4 ø 10.0		
P211 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	124.03 75.27	0.99 2.59	19.35 9.20	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/10	17.30 17.30
P212 1:20	30.00 X 30.00	15.00 300.00	300.00 RR 300.00 RR	171.54 109.72	4.62 2.74	7.84 5.46	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	34.60 34.60
P213 1:20	30.00 X 30.00	15.00 300.00	300.00 RR 300.00 RR	222.53 139.07	2.60 1.59	12.97 7.52	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	34.60 34.60
P214 1:20	30.00 X 30.00	20.00 300.00	300.00 RR 300.00 RR	187.50 116.95	2.00 1.40	6.87 4.72	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	34.60 34.60
P215 1:20	20.00 X 30.00	20.00 250.00	250.00 RR 250.00 RR	260.05 167.31	3.98 1.65	3.11 1.94	1.57 2 ø 10.0 1.57 2 ø 10.0 0.5 4 ø 10.0	ø 5.0 c/12	43.25 28.83
P216 1:20	30.00 X 30.00	20.00 200.00	200.00 RR 200.00 RR	245.60 158.45	6.40 4.60	7.24 4.25	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	23.07 23.07
P217 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	174.29 113.21	4.52 2.21	2.79 2.08	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P218 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	269.93 172.95	11.41 6.22	1.21 1.93	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P219 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	176.44 112.41	1.39 0.79	0.46 1.15	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P220 1:20	15.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	115.97 76.73	1.85 0.84	2.40 1.35	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	34.60 17.30
P221 1:20	15.00 X 30.00	20.00 300.00	300.00 RR 300.00 RR	131.22 81.58	2.15 1.10	2.43 1.64	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	69.20 34.60
P222 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	242.75 156.85	4.98 3.13	1.72 1.41	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P223 1:20	30.00 X	20.00 150.00	150.00 RR	184.62 121.96	8.51 2.62	4.79 3.11	2.45 2 ø 12.5 2.45 2 ø 12.5	ø 5.0 c/15	17.30 17.30

	30.00		150.00 RR				0.5 4 ø 12.5		
P224 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	171.08 111.65	3.58 2.42	3.62 2.26	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P225 1:20	30.00 X 30.00	20.00 150.00	570.00 RR 150.00 RR	137.99 89.06	2.31 4.73	2.07 1.63	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	65.74 17.30
P226 1:20	30.00 X 30.00	20.00 150.00	570.00 RR 150.00 RR	130.83 84.23	1.28 3.31	1.19 1.46	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	65.74 17.30
P227 1:20	30.00 X 35.00	20.00 150.00	150.00 RR 150.00 RR	107.05 67.25	2.58 3.01	1.12 1.21	1.57 2 ø 10.0 2.36 3 ø 10.0 0.4 6 ø 10.0	ø 5.0 c/12	17.30 14.83
P228 1:20	30.00 X 30.00	15.00 300.00	300.00 RR 300.00 RR	138.80 87.45	3.46 2.20	10.08 5.55	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	34.60 34.60
P229 1:20	30.00 X 30.00	15.00 300.00	300.00 RR 300.00 RR	188.62 119.87	1.37 0.87	12.95 7.55	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	34.60 34.60
P230 1:20	30.00 X 30.00	20.00 300.00	300.00 RR 300.00 RR	188.40 118.45	6.85 4.27	1.85 1.38	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	34.60 34.60
P231 1:20	30.00 X 30.00	20.00 250.00	250.00 RR 250.00 RR	299.16 192.76	10.84 9.15	4.15 2.70	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	28.83 28.83
P232 1:20	30.00 X 30.00	20.00 200.00	200.00 RR 200.00 RR	258.30 166.77	6.51 4.24	7.74 4.17	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	23.07 23.07
P233 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	221.36 144.06	12.65 9.81	4.77 4.00	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P234 1:20	30.00 X 30.00	20.00 150.00	150.00 RR 150.00 RR	211.86 138.35	12.35 7.91	3.76 2.15	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
P235 1:20	30.00 X 30.00	15.00 150.00	150.00 RR 150.00 RR	96.02 58.89	1.91 1.35	3.30 2.29	2.45 2 ø 12.5 2.45 2 ø 12.5 0.5 4 ø 12.5	ø 5.0 c/15	17.30 17.30
PM1 1:20	60.00 X	20.00 150.00	300.00 EL 300.00 EL	86.73 32.70	18.17 25.75	8.90 1.99	5.50 7 ø 10.0	ø 5.0 c/12	17.30 7.98

	130.00						11.78 15 ø 10.0 0.4 40 ø 10.0		
PM2 1:20	60.00 X 130.00	20.00 150.00	300.00 EL 300.00 EL	86.73 32.70	18.17 25.75	8.90 1.99	5.50 7 ø 10.0 11.78 15 ø 10.0 0.4 40 ø 10.0	ø 5.0 c/12	17.30 7.98

7. RESULTADOS DO RADIER DO EDIFÍCIO PRINCIPAL:

Nome	Espessura (cm)	Carga (kN/m²)	Mdx (kN.m/m)	Mdy (kN.m/m)	Asx	Asy
LA1	18	7.36	7.65	2.65	As = 2.16 cm²/m (ø8.0 c/10 - 5.03 cm²/m)	As = 2.30 cm²/m (ø8.0 c/10 - 5.03 cm²/m)

8. RESULTADOS DAS SAPATAS DA EDÍCULA:

Esforços e pressões

Nome	MB MH (kN.m)	FB FH (kN)	Carga Carga total (kN)	Pressão Sig1 (kN/m²)	Pressão Sig2 (kN/m²)	Pressão Sig3 (kN/m²)	Pressão Sig4 (kN/m²)
S1	0.85 0.80	0.99 1.41	24.23 33.93	49.63 (lim = 160.00)	89.94 (lim = 160.00)	124.35 (lim = 160.00)	84.04 (lim = 160.00)
S2	0.88 0.50	1.04 0.81	24.01 33.70	98.51 (lim = 160.00)	56.89 (lim = 160.00)	74.31 (lim = 160.00)	115.92 (lim = 160.00)
S3	1.13 0.64	1.14 0.99	50.34 63.31	99.91 (lim = 160.00)	128.97 (lim = 160.00)	143.57 (lim = 160.00)	114.52 (lim = 160.00)
S4	1.21 0.53	1.22 0.79	53.06 66.02	135.48 (lim = 160.00)	108.39 (lim = 160.00)	118.44 (lim = 160.00)	145.53 (lim = 160.00)
S5	0.91 1.11	1.01 2.17	28.24 37.93	101.01 (lim = 160.00)	143.86 (lim = 160.00)	93.51 (lim = 160.00)	50.67 (lim = 160.00)
S6	0.84 0.60	1.03 1.14	22.85 32.54	115.73 (lim = 160.00)	75.77 (lim = 160.00)	51.14 (lim = 160.00)	91.10 (lim = 160.00)

Estabilidade

Nome	Tombamento B		Tombamento H		Deslizamento		Arrancamento	
	Mrd Msd (kN.m)	Mrd / Msd	Mrd Msd (kN.m)	Mrd / Msd	Frd Fsd (kN)	Frd / Fsd	Nt (kN)	Ns (kN)
S1	11.03 0.85	12.95 (lim = 1.50)	9.42 0.80	11.72 (lim = 1.50)	10.39 1.36	7.65 lim = (1.50)		
S2	10.95 0.88	12.46 (lim = 1.50)	9.38 0.50	18.89 (lim = 1.50)	12.33 1.21	10.17 lim = (1.50)		
S3	22.62 1.13	19.99 (lim = 1.50)	19.46 0.64	30.37 (lim = 1.50)	20.70 1.35	15.36 lim = (1.50)		
S4	23.71 1.21	19.55 (lim = 1.50)	20.32 0.53	38.38 (lim = 1.50)	21.69 1.30	16.69 lim = (1.50)		
S5	12.33 0.91	13.62 (lim = 1.50)	10.58 1.11	9.57 (lim = 1.50)	11.82 2.10	5.63 lim = (1.50)		
S6	10.58 0.84	12.53 (lim = 1.50)	8.99 0.60	15.04 (lim = 1.50)	11.91 1.45	8.19 lim = (1.50)		

Verificação de tensão em área reduzida

Nome	Interface pilar-fundação		
	Força solicitante (kN)	Força resistente (kN)	Condição
S1	33.93	940.31	OK
S2	33.61	940.43	OK
S3	70.48	1204.50	OK
S4	74.28	1204.68	OK
S5	39.54	940.31	OK
S6	31.98	940.43	OK

Dimensionamento

Nome	Armaduras inferiores		Armaduras superiores	
	Dir. B	Dir. H	Dir. B	Dir. H
	Md (kN.m/m) As (cm²/m)	Md (kN.m/m) As (cm²/m)	Md (kN.m/m) A's (cm²/m)	Md (kN.m/m) A's (cm²/m)
S1	35.77	35.77	0.00	0.00
	5.76	5.76	0.00	0.00
S2	35.77	35.77	0.00	0.00
	5.76	5.76	0.00	0.00
S3	35.77	35.77	0.00	0.00
	5.76	5.76	0.00	0.00
S4	35.77	35.77	0.00	0.00
	5.76	5.76	0.00	0.00
S5	35.77	35.77	0.00	0.00
	5.76	5.76	0.00	0.00
S6	35.77	35.77	0.00	0.00
	5.76	5.76	0.00	0.00

9. RESULTADOS DOS PILARES DA EDÍCULA:

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	le b vinc le h vinc (cm)	Nd máx Nd mín (kN)	MBd topo MBd base (kN.m)	MHd topo MHd base (kN.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	15.00 X 25.00	25.00 150.00	150.00 RR 150.00 RR	33.93 16.37	1.84 1.12	0.89 1.19	1.57 2 ø 10.0 1.57 2 ø 10.0 0.8 4 ø 10.0	ø 5.0 c/12	34.60 20.76
P2 1:20	15.00 X 25.00	25.00 150.00	150.00 RR 150.00 RR	33.61 16.15	1.01 0.70	0.97 1.23	1.57 2 ø 10.0 1.57 2 ø 10.0 0.8 4 ø 10.0	ø 5.0 c/12	34.60 20.76
P3 1:20	16.00 X 30.00	25.00 150.00	150.00 RR 150.00 RR	70.48 41.12	1.18 0.90	0.81 1.58	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	32.44 17.30

P4 1:20	16.00 X 30.00	25.00 150.00	150.00 RR 150.00 RR	74.28 43.82	0.92 0.74	0.86 1.70	1.57 2 ø 10.0 1.57 2 ø 10.0 0.7 4 ø 10.0	ø 5.0 c/12	32.44 17.30
P5 1:20	15.00 X 25.00	25.00 150.00	150.00 RR 150.00 RR	39.54 20.31	3.01 1.55	0.86 1.27	1.57 2 ø 10.0 1.57 2 ø 10.0 0.8 4 ø 10.0	ø 5.0 c/12	34.60 20.76
P6 1:20	15.00 X 25.00	25.00 150.00	150.00 RR 150.00 RR	31.98 14.93	1.57 0.84	0.98 1.18	1.57 2 ø 10.0 1.57 2 ø 10.0 0.8 4 ø 10.0	ø 5.0 c/12	34.60 20.76

10. RESULTADOS DAS SAPATAS DA CASA DE GASES:

Esforços e pressões

Nome	MB MH (kN.m)	FB FH (kN)	Carga Carga total (kN)	Pressão Sig1 (kN/m²)	Pressão Sig2 (kN/m²)	Pressão Sig3 (kN/m²)	Pressão Sig4 (kN/m²)
S1	0.33 0.25	0.31 0.26	9.30 19.05	55.19 (lim = 160.00)	40.25 (lim = 160.00)	42.48 (lim = 160.00)	57.42 (lim = 160.00)
S2	0.33 0.26	0.31 0.27	10.18 19.92	42.15 (lim = 160.00)	57.56 (lim = 160.00)	60.00 (lim = 160.00)	44.59 (lim = 160.00)
S3	0.33 0.25	0.31 0.26	9.31 19.05	57.42 (lim = 160.00)	42.48 (lim = 160.00)	40.25 (lim = 160.00)	55.19 (lim = 160.00)
S4	0.33 0.26	0.31 0.27	10.18 19.92	44.59 (lim = 160.00)	60.00 (lim = 160.00)	57.56 (lim = 160.00)	42.16 (lim = 160.00)

Estabilidade

Nome	Tombamento B		Tombamento H		Deslizamento		Arrancamento	
	Mrd Msd (kN.m)	Mrd / Msd	Mrd Msd (kN.m)	Mrd / Msd	Frd Fsd (kN)	Frd / Fsd	Nt (kN)	Ns (kN)
S1	5.10 0.33	15.62 (lim = 1.50)	4.95 0.25	19.49 (lim = 1.50)	5.75 0.31	18.69 lim = (1.50)		
S2	5.39 0.32	17.00 (lim = 1.50)	5.22 0.26	20.23 (lim = 1.50)	6.07 0.31	19.72 lim = (1.50)		
S3	5.10 0.33	15.62 (lim = 1.50)	4.95 0.25	19.49 (lim = 1.50)	5.75 0.31	18.69 lim = (1.50)		
S4	5.39 0.32	17.00 (lim = 1.50)	5.22 0.26	20.23 (lim = 1.50)	6.07 0.31	19.72 lim = (1.50)		

Verificação de tensão em área reduzida

Nome	Interface pilar-fundação		
	Força solicitante (kN)	Força resistente (kN)	Condição

S1	13.03	2275.00	OK
S2	14.25	2275.00	OK
S3	13.03	2275.00	OK
S4	14.25	2275.00	OK

Dimensionamento

Nome	Armaduras inferiores		Armaduras superiores	
	Dir. B	Dir. H	Dir. B	Dir. H
	Md (kN.m/m) As (cm ² /m)	Md (kN.m/m) As (cm ² /m)	Md (kN.m/m) A's (cm ² /m)	Md (kN.m/m) A's (cm ² /m)
S1	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S2	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S3	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00
S4	35.77 5.76	35.77 5.76	0.00 0.00	0.00 0.00

11. RESULTADOS DOS PILARES DA CASA DE GASES:

Dados				Resultados					
Pilar	Seção (cm)	Nível Altura (cm)	le b vinc le h vinc (cm)	Nd máx Nd mín (kN)	MBd topo MBd base (kN.m)	MHd topo MHd base (kN.m)	As b Armaduras As h % armad total	Estribo Topo Base cota	Esb b Esb h
P1 1:20	14.00 X 25.00	25.00 150.00	150.00 RR 150.00 RR	13.03 4.16	0.19 0.36	0.20 0.46	1.57 2 ø 10.0 1.57 2 ø 10.0 0.9 4 ø 10.0	ø 5.0 c/12	37.07 20.76
P2 1:20	14.00 X 25.00	25.00 150.00	150.00 RR 150.00 RR	14.25 5.08	0.20 0.36	0.20 0.46	1.57 2 ø 10.0 1.57 2 ø 10.0 0.9 4 ø 10.0	ø 5.0 c/12	37.07 20.76
P3 1:20	14.00 X 25.00	25.00 150.00	150.00 RR 150.00 RR	13.03 4.16	0.19 0.36	0.20 0.46	1.57 2 ø 10.0 1.57 2 ø 10.0 0.9 4 ø 10.0	ø 5.0 c/12	37.07 20.76
P4 1:20	14.00 X 25.00	25.00 150.00	150.00 RR 150.00 RR	14.25 5.08	0.20 0.36	0.20 0.46	1.57 2 ø 10.0 1.57 2 ø 10.0 0.9 4 ø 10.0	ø 5.0 c/12	37.07 20.76

12. RESULTADOS DO RADIER DO RESERVATÓRIO:

ARMADURAS (RADIER)					
Seção	Direção	Flexão Positiva		Flexão Negativa	
h = 60 cm	X	Md = 17,61 kN.m/m	As = 6,03 cm ¹ /m	Md = 0,75 kN.m/m	As = 6,03 cm ¹ /m
	Y	Md = 23,11 kN.m/m	As = 6,03 cm ¹ /m	Md = 0,73 kN.m/m	As = 6,03 cm ¹ /m

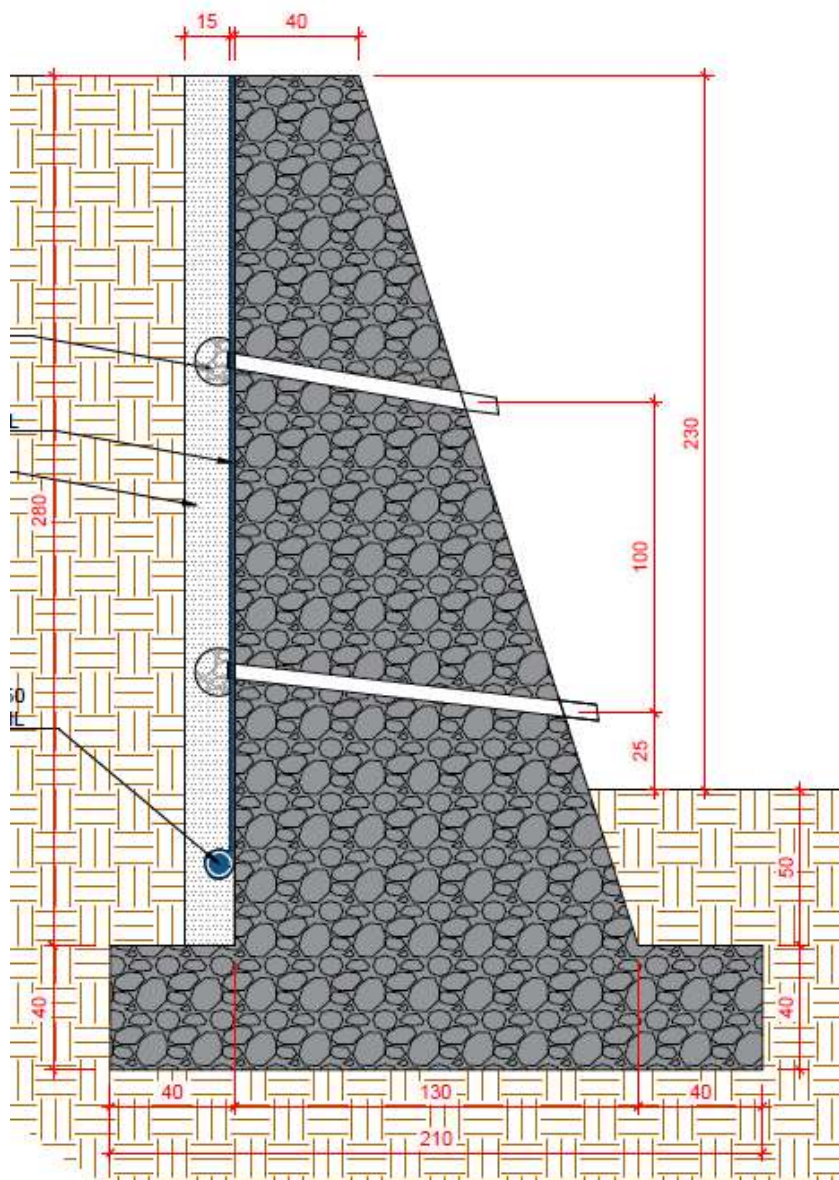
Pressão de contato mínima: 0,31 kgf/cm²

Pressão de contato máxima: 0,65 kgf/cm²

13. RESULTADOS DAS CONTENÇÕES

13.1. MURO 1

A contenção possui comprimento total de 31,38 m altura máxima de 2,3 m e foi concebida em muro de gravidade de pedra argamassada.



Para a contenção foi considerado:

- Carga acidental uniformemente distribuída: $q = 3,0 \text{ kN/m}^2$;
- Ângulo de atrito do solo: $\varphi = 30^\circ$;

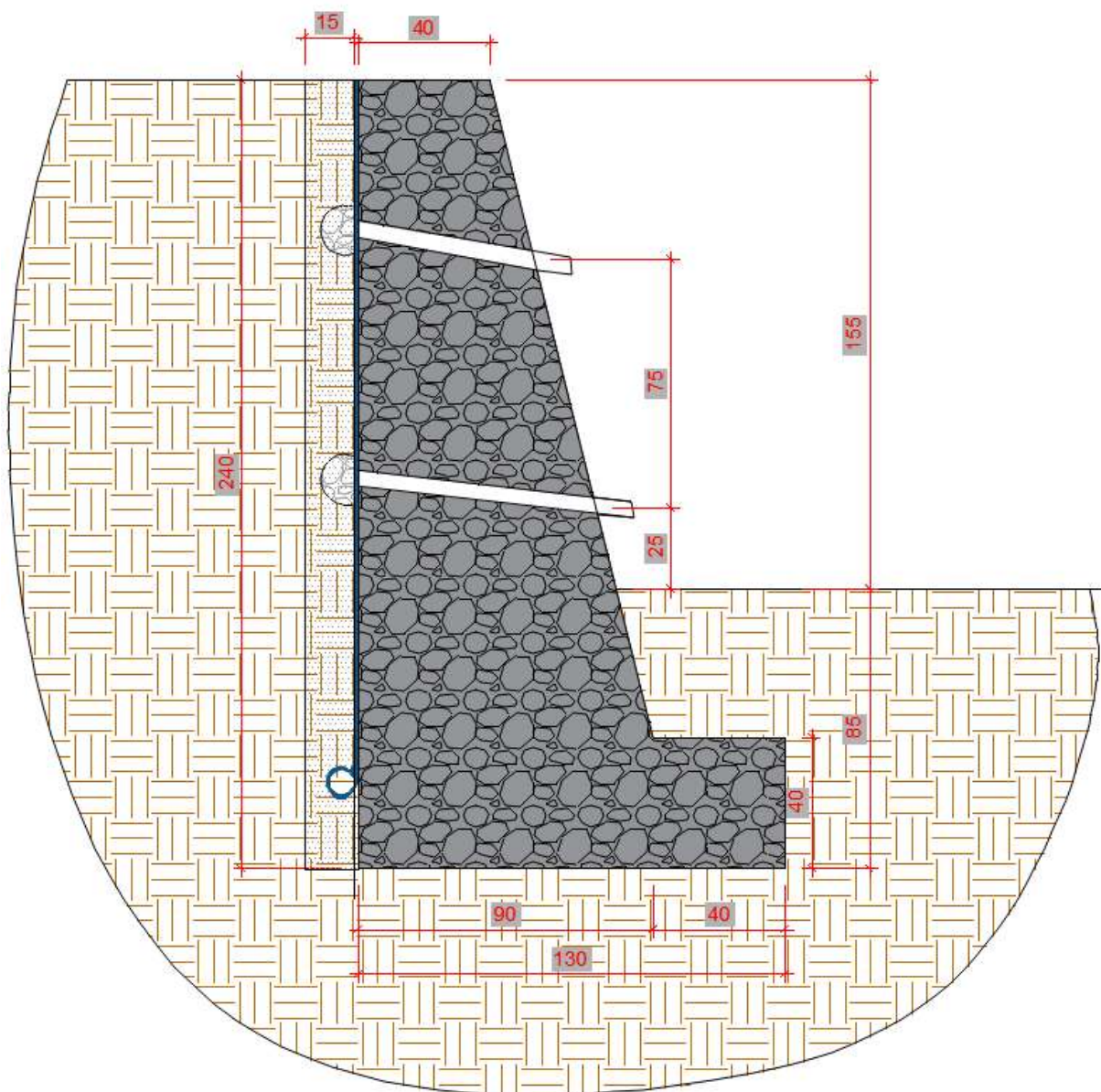
- Coesão do solo: $c = 0$ (Não considerado);
- Coeficiente de atrito solo x sapata: $\mu = 0,4$

Geometria			
Altura de contenção	h1	2,30	m
Altura enterrada	h2	0,90	m
Altura Total	H	3,20	m
Altura do dente	d	0,40	m
Largura do dente a jusante	t1	0,40	m
Largura do dente a montante	t2	0,40	m
Largura do topo	b0	0,40	m
Largura na base	b	1,30	m
Base	B	2,10	M

Resultados			
Coef. De empuxo ativo	Ka	0,34	-
Momento resistente	Mr	64,88	kN.m/m
Momento de tombamento	M	38,6	kN.m/m
FS Tombamento	FS_Tomb	1,68	-
Força Resistente de deslizamento	Fr	37,37	kN/m
Força de Deslizamento	F	12,05	kN/m
FS Deslizamento	FS_Des	3,10	-
Tensão máxima no solo	σ	141,7	kPa

13.2. MURO 2

A contenção possui comprimento total de 50,4 m altura máxima de 1,55 m e foi concebida em muro de gravidade de pedra argamassada.



Para a contenção foi considerado:

- Carga acidental uniformemente distribuída: $q = 3,0 \text{ kN/m}^2$;
- Ângulo de atrito do solo: $\phi = 30^\circ$;
- Coesão do solo: $c = 0$ (Não considerado);
- Coeficiente de atrito solo x sapata: $\mu = 0,4$

Geometria			
Altura de contenção	h1	1,55	m
Altura enterrada	h2	0,85	m
Altura Total	H	2,40	m
Altura do dente	d	0,40	m
Largura do dente a jusante	t1	0,40	m
Largura do dente a montante	t2	0,00	m
Largura do topo	b0	0,40	m
Largura na base	b	0,90	m
Base	B	1,30	M

Resultados			
Coef. De empuxo ativo	Ka	0,34	-
Momento resistente	Mr	28,17	kN.m/m
Momento de tombamento	M	17,02	kN.m/m
FS Tombamento	FS_Tomb	1,65	-
Força Resistente de deslizamento	Fr	20,77	kN/m
Força de Deslizamento	F	0,17	kN/m
FS Deslizamento	FS_Des	120,4	-
Tensão máxima no solo	σ	103,2	kPa