

# CONSÓRCIO SAÚDE

CONCREMAT | MEP

## MEMORIAL DE CÁLCULO DE QUANTITATIVO PROJETO EXECUTIVO DE FUNDAÇÃO

CER  
TIPO 04

JUNHO/2026  
VERSÃO R00

[illegible]

## ÍNDICE

|                                                       |    |
|-------------------------------------------------------|----|
| 1. INTRODUÇÃO.....                                    | 4  |
| 2. DOCUMENTOS DE REFERÊNCIA .....                     | 4  |
| 2.1. NORMAS DE REFERÊNCIA .....                       | 4  |
| 3. EXIGENCIAS DE DURABILIDADE.....                    | 4  |
| 3.1. CONCRETO ARMADO.....                             | 4  |
| 3.2. ARMADURA PASSIVA.....                            | 5  |
| 3.3. ALVENARIA DE PEDRA ARGAMASSADA .....             | 5  |
| 4. COMBINAÇÕES DE AÇÕES.....                          | 6  |
| 5. RESULTADOS DAS SAPATAS DO EDIFÍCIO PRINCIPAL:..... | 11 |
| 6. RESULTADOS DOS PILARES DO EDIFÍCIO PRINCIPAL:..... | 40 |
| 7. RESULTADOS DO RADIER DO EDIFÍCIO PRINCIPAL:.....   | 58 |
| 8. RESULTADOS DAS SAPATAS DA EDÍCULA:.....            | 58 |
| 9. RESULTADOS DOS PILARES DA EDÍCULA:.....            | 59 |
| 10. RESULTADOS DAS SAPATAS DA CASA DE GASES: .....    | 60 |
| 11. RESULTADOS DOS PILARES DA CASA DE GASES: .....    | 61 |
| 12. RESULTADOS DO RADIER DO RESERVATÓRIO:.....        | 62 |
| 13. RESULTADOS DAS CONTENÇÕES .....                   | 62 |

## 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, no município de Guanambi/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 Descritivo 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

|                            |                                                                    |
|----------------------------|--------------------------------------------------------------------|
| <b>ABNT NBR 6118:2023</b>  | Projeto de Estruturas de Concreto - Procedimento                   |
| <b>ABNT NBR 6120:2019</b>  | Cargas para cálculo de estruturas de edificações                   |
| <b>ABNT NBR 6122:2022</b>  | Projeto e Execução de Fundações                                    |
| <b>ABNT NBR 6123:2023</b>  | Forças Devidas ao Vento em Edificações                             |
| <b>ABNT NBR 8681:2003</b>  | Ações e Segurança nas Estruturas – Procedimento                    |
| <b>ABNT NBR 12655:2022</b> | Controle de cimento Portland                                       |
| <b>ABNT NBR 5674:2024</b>  | Manutenção de edificação – procedimentos                           |
| <b>ABNT NBR 14931:2023</b> | Execução de estruturas de concreto armado, protendido e com fibras |
| <b>ABNT NBR 15575:2024</b> | 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  $\geq 50$  MPa (NBR 15845), absorção d'água  $\leq 3,0\%$ , massa específica aparente  $\geq 2.500$  kg/m<sup>3</sup>, 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  $\geq 5$  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  $\geq 200$  g/m<sup>2</sup>.

Dreno horizontal paralelo ao muro, em PVC Ø 150 mm envolto em geotêxtil não tecido PP  $\geq 200$  g/m<sup>2</sup>.

## 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                          |
| $\gamma_g$ | Coefficiente parcial de segurança das ações permanentes           |
| $\gamma_q$ | Coefficiente parcial de segurança das ações variáveis             |
| $\psi_0$   | Fator de combinação                                               |
| $\psi_1$   | Fator de redução frequente                                        |
| $\psi_2$   | 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      |

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

**Tabela 2: Coeficientes de ponderação das ações para cargas variáveis ( $\gamma_q$ )**

| Ação                          | Exemplo                              | Desfavorável | Favorável |
|-------------------------------|--------------------------------------|--------------|-----------|
| <b>Vento</b>                  | Vento                                | 1,40         | 0,00      |
| <b>Ações truncadas</b>        | Reservatório de água<br>Boiler       | 1,20         | 0,00      |
| <b>Demais ações variáveis</b> | Sobrecargas em geral                 | 1,50         | 0,00      |
| <b>Efeito de temperatura</b>  | 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  $\psi$  para ações variáveis que representam o coeficiente  $\gamma_{f2}$  é apresentado na tabela a seguir

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

| Ação                                         | $\psi_0$                                                                                              | $\psi_1$ | $\psi_2$ |     |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------|----------|----------|-----|
| 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:

### Relatório de Cálculos das Sapatas

#### Esforços e pressões

| Nome | MB<br>MH<br>(kN.m) | FB<br>FH<br>(kN) | Carga<br>Carga total<br>(kN) | Pressão Sig1<br>(kgf/cm²) | Pressão Sig2<br>(kgf/cm²) | Pressão Sig3<br>(kgf/cm²) | Pressão Sig4<br>(kgf/cm²) |
|------|--------------------|------------------|------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| S1   | 2.06<br>2.83       | 3.22<br>4.05     | 94.27<br>116.96              | 1.56<br>(lim = 1.60)      | 1.39<br>(lim = 1.60)      | 0.99<br>(lim = 1.60)      | 1.16<br>(lim = 1.60)      |
| S2   | 0.61<br>2.19       | 0.30<br>3.37     | 121.47<br>148.51             | 1.56<br>(lim = 1.60)      | 1.49<br>(lim = 1.60)      | 1.28<br>(lim = 1.60)      | 1.35<br>(lim = 1.60)      |
| S3   | 0.57<br>2.01       | 0.49<br>3.10     | 113.29<br>140.33             | 1.40<br>(lim = 1.60)      | 1.47<br>(lim = 1.60)      | 1.28<br>(lim = 1.60)      | 1.21<br>(lim = 1.60)      |
| S4   | 3.03<br>3.12       | 5.09<br>4.06     | 162.73<br>199.43             | 1.55<br>(lim = 1.60)      | 1.42<br>(lim = 1.60)      | 1.21<br>(lim = 1.60)      | 1.35<br>(lim = 1.60)      |
| S5   | 2.34<br>2.77       | 3.94<br>1.91     | 195.75<br>237.35             | 1.47<br>(lim = 1.60)      | 1.58<br>(lim = 1.60)      | 1.45<br>(lim = 1.60)      | 1.34<br>(lim = 1.60)      |
| S6   | 1.28<br>2.95       | 1.37<br>3.97     | 122.37<br>150.13             | 1.56<br>(lim = 1.60)      | 1.44<br>(lim = 1.60)      | 1.16<br>(lim = 1.60)      | 1.29<br>(lim = 1.60)      |
| S7   | 1.59<br>2.99       | 2.48<br>5.41     | 86.13<br>107.54              | 1.40<br>(lim = 1.60)      | 1.53<br>(lim = 1.60)      | 1.06<br>(lim = 1.60)      | 0.94<br>(lim = 1.60)      |
| S8   | 0.97<br>2.78       | 1.76<br>4.68     | 132.65<br>162.49             | 1.57<br>(lim = 1.60)      | 1.49<br>(lim = 1.60)      | 1.26<br>(lim = 1.60)      | 1.33<br>(lim = 1.60)      |
| S9   | 3.05<br>2.81       | 5.61<br>4.05     | 153.64<br>187.23             | 1.43<br>(lim = 1.60)      | 1.60<br>(lim = 1.60)      | 1.38<br>(lim = 1.60)      | 1.21<br>(lim = 1.60)      |
| S10  | 4.14<br>4.39       | 6.65<br>6.46     | 142.26<br>177.37             | 1.54<br>(lim = 1.60)      | 1.33<br>(lim = 1.60)      | 1.01<br>(lim = 1.60)      | 1.22<br>(lim = 1.60)      |
| S11  | 4.21<br>2.57       | 8.18<br>3.67     | 103.88<br>130.26             | 1.20<br>(lim = 1.60)      | 1.57<br>(lim = 1.60)      | 1.28<br>(lim = 1.60)      | 0.90<br>(lim = 1.60)      |
| S12  | 1.35<br>0.53       | 2.23<br>0.66     | 105.26<br>128.22             | 1.47<br>(lim = 1.60)      | 1.32<br>(lim = 1.60)      | 1.40<br>(lim = 1.60)      | 1.56<br>(lim = 1.60)      |
| S13  | 0.84<br>1.68       | 0.36<br>2.26     | 167.94<br>203.35             | 1.38<br>(lim = 1.60)      | 1.45<br>(lim = 1.60)      | 1.56<br>(lim = 1.60)      | 1.50<br>(lim = 1.60)      |
| S14  | 0.69<br>1.38       | 0.29<br>2.29     | 137.57<br>167.41             | 1.43<br>(lim = 1.60)      | 1.36<br>(lim = 1.60)      | 1.48<br>(lim = 1.60)      | 1.55<br>(lim = 1.60)      |
| S15  | 0.97<br>1.94       | 0.30<br>1.82     | 194.13<br>235.97             | 1.37<br>(lim = 1.60)      | 1.43<br>(lim = 1.60)      | 1.54<br>(lim = 1.60)      | 1.48<br>(lim = 1.60)      |
| S16  | 0.79<br>1.58       | 0.96<br>2.17     | 158.44<br>193.84             | 1.32<br>(lim = 1.60)      | 1.39<br>(lim = 1.60)      | 1.50<br>(lim = 1.60)      | 1.43<br>(lim = 1.60)      |
| S17  | 0.82<br>1.24       | 1.08<br>2.19     | 58.38<br>72.27               | 1.06<br>(lim = 1.60)      | 1.21<br>(lim = 1.60)      | 1.56<br>(lim = 1.60)      | 1.41<br>(lim = 1.60)      |
| S18  | 0.87<br>2.14       | 1.59<br>3.89     | 173.50<br>212.06             | 1.39<br>(lim = 1.60)      | 1.33<br>(lim = 1.60)      | 1.45<br>(lim = 1.60)      | 1.51<br>(lim = 1.60)      |
| S19  | 3.40<br>2.32       | 5.71<br>3.51     | 156.80<br>191.91             | 1.23<br>(lim = 1.60)      | 1.41<br>(lim = 1.60)      | 1.56<br>(lim = 1.60)      | 1.38<br>(lim = 1.60)      |
| S20  | 3.07<br>2.14       | 5.22<br>4.08     | 176.67<br>214.97             | 1.44<br>(lim = 1.60)      | 1.29<br>(lim = 1.60)      | 1.40<br>(lim = 1.60)      | 1.55<br>(lim = 1.60)      |
| S21  | 3.86<br>1.47       | 6.59<br>1.91     | 133.86<br>164.47             | 1.11<br>(lim = 1.60)      | 1.45<br>(lim = 1.60)      | 1.57<br>(lim = 1.60)      | 1.23<br>(lim = 1.60)      |

|     |              |               |                  |                      |                      |                      |                      |
|-----|--------------|---------------|------------------|----------------------|----------------------|----------------------|----------------------|
| S22 | 6.35<br>2.83 | 11.86<br>3.95 | 164.40<br>204.34 | 1.54<br>(lim = 1.60) | 1.18<br>(lim = 1.60) | 1.07<br>(lim = 1.60) | 1.44<br>(lim = 1.60) |
| S23 | 4.98<br>2.01 | 9.09<br>2.42  | 201.38<br>246.43 | 1.34<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.23<br>(lim = 1.60) |
| S24 | 0.61<br>1.68 | 0.54<br>2.63  | 121.25<br>148.29 | 1.53<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.31<br>(lim = 1.60) | 1.39<br>(lim = 1.60) |
| S25 | 1.83<br>2.24 | 2.33<br>2.86  | 171.92<br>208.62 | 1.57<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.33<br>(lim = 1.60) | 1.45<br>(lim = 1.60) |
| S26 | 2.66<br>5.44 | 2.44<br>7.61  | 266.24<br>324.38 | 1.59<br>(lim = 1.60) | 1.49<br>(lim = 1.60) | 1.30<br>(lim = 1.60) | 1.39<br>(lim = 1.60) |
| S27 | 3.14<br>2.42 | 5.61<br>3.07  | 122.01<br>149.78 | 1.35<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.36<br>(lim = 1.60) | 1.14<br>(lim = 1.60) |
| S28 | 1.44<br>2.53 | 1.41<br>3.64  | 142.20<br>172.81 | 1.46<br>(lim = 1.60) | 1.59<br>(lim = 1.60) | 1.40<br>(lim = 1.60) | 1.27<br>(lim = 1.60) |
| S29 | 1.51<br>2.49 | 2.38<br>3.59  | 136.32<br>165.48 | 1.59<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.22<br>(lim = 1.60) | 1.35<br>(lim = 1.60) |
| S30 | 4.09<br>2.65 | 7.57<br>3.71  | 192.82<br>236.14 | 1.52<br>(lim = 1.60) | 1.38<br>(lim = 1.60) | 1.23<br>(lim = 1.60) | 1.37<br>(lim = 1.60) |
| S31 | 6.94<br>2.02 | 12.30<br>2.46 | 153.18<br>189.88 | 1.15<br>(lim = 1.60) | 1.60<br>(lim = 1.60) | 1.49<br>(lim = 1.60) | 1.04<br>(lim = 1.60) |
| S32 | 5.97<br>3.13 | 11.26<br>5.20 | 119.61<br>150.22 | 1.32<br>(lim = 1.60) | 0.86<br>(lim = 1.60) | 1.13<br>(lim = 1.60) | 1.59<br>(lim = 1.60) |
| S33 | 5.03<br>1.76 | 9.07<br>2.27  | 175.86<br>215.81 | 1.18<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.28<br>(lim = 1.60) |
| S34 | 0.55<br>1.47 | 0.50<br>2.45  | 109.33<br>133.70 | 1.38<br>(lim = 1.60) | 1.31<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.52<br>(lim = 1.60) |
| S35 | 1.71<br>1.89 | 2.21<br>2.70  | 145.56<br>176.17 | 1.46<br>(lim = 1.60) | 1.32<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.59<br>(lim = 1.60) |
| S36 | 1.63<br>1.70 | 1.99<br>3.95  | 147.75<br>179.82 | 1.42<br>(lim = 1.60) | 1.30<br>(lim = 1.60) | 1.42<br>(lim = 1.60) | 1.55<br>(lim = 1.60) |
| S37 | 2.77<br>2.31 | 4.79<br>2.84  | 155.31<br>188.90 | 1.39<br>(lim = 1.60) | 1.59<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.27<br>(lim = 1.60) |
| S38 | 4.71<br>1.91 | 8.35<br>2.07  | 190.80<br>234.12 | 1.56<br>(lim = 1.60) | 1.32<br>(lim = 1.60) | 1.21<br>(lim = 1.60) | 1.45<br>(lim = 1.60) |
| S39 | 3.51<br>2.20 | 6.07<br>3.13  | 152.74<br>186.33 | 1.21<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 1.33<br>(lim = 1.60) |
| S40 | 6.56<br>2.35 | 11.80<br>3.62 | 174.00<br>213.95 | 1.49<br>(lim = 1.60) | 1.11<br>(lim = 1.60) | 1.22<br>(lim = 1.60) | 1.59<br>(lim = 1.60) |
| S41 | 8.07<br>2.18 | 16.01<br>3.33 | 121.96<br>155.55 | 0.80<br>(lim = 1.60) | 1.37<br>(lim = 1.60) | 1.53<br>(lim = 1.60) | 0.96<br>(lim = 1.60) |
| S42 | 3.53<br>4.80 | 8.38<br>7.80  | 98.97<br>125.65  | 1.60<br>(lim = 1.60) | 1.34<br>(lim = 1.60) | 0.79<br>(lim = 1.60) | 1.05<br>(lim = 1.60) |
| S43 | 2.00<br>9.40 | 1.43<br>0.82  | 101.59<br>132.42 | 1.45<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 0.73<br>(lim = 1.60) | 0.61<br>(lim = 1.60) |
| S44 | 4.44<br>5.06 | 8.71<br>7.99  | 99.97<br>128.10  | 1.25<br>(lim = 1.60) | 1.59<br>(lim = 1.60) | 1.07<br>(lim = 1.60) | 0.73<br>(lim = 1.60) |
| S45 | 4.61<br>3.93 | 9.56<br>5.96  | 116.15<br>146.76 | 1.56<br>(lim = 1.60) | 1.21<br>(lim = 1.60) | 0.86<br>(lim = 1.60) | 1.21<br>(lim = 1.60) |
| S46 | 1.13<br>2.81 | 1.99<br>5.16  | 133.10<br>162.94 | 1.48<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 1.32<br>(lim = 1.60) | 1.23<br>(lim = 1.60) |
| S47 | 1.33<br>2.86 | 1.48<br>4.04  | 92.20<br>114.88  | 1.40<br>(lim = 1.60) | 1.53<br>(lim = 1.60) | 1.14<br>(lim = 1.60) | 1.01<br>(lim = 1.60) |

|     |              |               |                  |                      |                      |                      |                      |
|-----|--------------|---------------|------------------|----------------------|----------------------|----------------------|----------------------|
| S48 | 0.50<br>1.94 | 0.60<br>3.09  | 100.03<br>121.86 | 1.51<br>(lim = 1.60) | 1.59<br>(lim = 1.60) | 1.33<br>(lim = 1.60) | 1.25<br>(lim = 1.60) |
| S49 | 1.26<br>3.04 | 1.10<br>3.96  | 125.70<br>154.86 | 1.42<br>(lim = 1.60) | 1.54<br>(lim = 1.60) | 1.24<br>(lim = 1.60) | 1.12<br>(lim = 1.60) |
| S50 | 0.53<br>2.71 | 0.86<br>4.43  | 95.92<br>120.28  | 1.39<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.14<br>(lim = 1.60) | 1.07<br>(lim = 1.60) |
| S51 | 1.77<br>5.40 | 2.04<br>8.59  | 100.88<br>127.25 | 1.46<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 0.95<br>(lim = 1.60) | 0.84<br>(lim = 1.60) |
| S52 | 0.85<br>1.70 | 0.93<br>3.19  | 79.49<br>98.92   | 1.39<br>(lim = 1.60) | 1.52<br>(lim = 1.60) | 1.19<br>(lim = 1.60) | 1.06<br>(lim = 1.60) |
| S53 | 1.83<br>4.28 | 2.25<br>6.78  | 110.37<br>136.74 | 1.48<br>(lim = 1.60) | 1.60<br>(lim = 1.60) | 1.11<br>(lim = 1.60) | 1.00<br>(lim = 1.60) |
| S54 | 0.56<br>4.25 | 0.33<br>7.81  | 112.68<br>139.72 | 1.51<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.14<br>(lim = 1.60) | 1.07<br>(lim = 1.60) |
| S55 | 1.68<br>3.25 | 1.88<br>4.69  | 165.71<br>202.41 | 1.44<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.36<br>(lim = 1.60) | 1.25<br>(lim = 1.60) |
| S56 | 2.61<br>1.79 | 4.31<br>1.88  | 178.51<br>216.80 | 1.58<br>(lim = 1.60) | 1.43<br>(lim = 1.60) | 1.31<br>(lim = 1.60) | 1.46<br>(lim = 1.60) |
| S57 | 0.61<br>2.00 | 0.96<br>3.24  | 122.78<br>149.82 | 1.48<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.38<br>(lim = 1.60) | 1.31<br>(lim = 1.60) |
| S58 | 0.54<br>2.06 | 0.65<br>3.36  | 108.28<br>132.64 | 1.55<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.26<br>(lim = 1.60) | 1.34<br>(lim = 1.60) |
| S59 | 0.67<br>1.90 | 0.36<br>3.04  | 133.95<br>163.79 | 1.46<br>(lim = 1.60) | 1.53<br>(lim = 1.60) | 1.39<br>(lim = 1.60) | 1.32<br>(lim = 1.60) |
| S60 | 0.66<br>1.92 | 0.35<br>3.09  | 131.11<br>160.95 | 1.44<br>(lim = 1.60) | 1.51<br>(lim = 1.60) | 1.36<br>(lim = 1.60) | 1.29<br>(lim = 1.60) |
| S61 | 2.50<br>3.03 | 3.78<br>4.45  | 92.62<br>115.30  | 1.36<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.16<br>(lim = 1.60) | 0.95<br>(lim = 1.60) |
| S62 | 7.41<br>1.73 | 12.87<br>1.59 | 96.88<br>125.01  | 1.44<br>(lim = 1.60) | 0.69<br>(lim = 1.60) | 0.82<br>(lim = 1.60) | 1.58<br>(lim = 1.60) |
| S63 | 1.72<br>0.60 | 2.40<br>0.40  | 29.52<br>39.43   | 1.39<br>(lim = 1.60) | 0.64<br>(lim = 1.60) | 0.47<br>(lim = 1.60) | 1.22<br>(lim = 1.60) |
| S64 | 5.84<br>1.55 | 13.40<br>1.47 | 96.11<br>122.79  | 0.79<br>(lim = 1.60) | 1.41<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 0.93<br>(lim = 1.60) |
| S65 | 4.62<br>2.82 | 8.84<br>4.94  | 159.25<br>195.95 | 1.46<br>(lim = 1.60) | 1.15<br>(lim = 1.60) | 1.26<br>(lim = 1.60) | 1.57<br>(lim = 1.60) |
| S66 | 3.38<br>1.60 | 6.10<br>2.96  | 159.75<br>195.15 | 1.27<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.38<br>(lim = 1.60) |
| S67 | 1.27<br>2.35 | 1.86<br>3.61  | 91.03<br>112.44  | 1.18<br>(lim = 1.60) | 1.05<br>(lim = 1.60) | 1.40<br>(lim = 1.60) | 1.53<br>(lim = 1.60) |
| S68 | 0.58<br>1.56 | 0.40<br>2.65  | 115.35<br>139.72 | 1.36<br>(lim = 1.60) | 1.44<br>(lim = 1.60) | 1.60<br>(lim = 1.60) | 1.51<br>(lim = 1.60) |
| S69 | 1.44<br>1.72 | 1.86<br>2.66  | 143.80<br>174.41 | 1.44<br>(lim = 1.60) | 1.31<br>(lim = 1.60) | 1.44<br>(lim = 1.60) | 1.57<br>(lim = 1.60) |
| S70 | 0.57<br>2.19 | 0.88<br>4.13  | 114.36<br>141.39 | 1.22<br>(lim = 1.60) | 1.29<br>(lim = 1.60) | 1.49<br>(lim = 1.60) | 1.42<br>(lim = 1.60) |
| S71 | 1.15<br>4.13 | 1.47<br>7.85  | 108.43<br>134.80 | 1.08<br>(lim = 1.60) | 0.97<br>(lim = 1.60) | 1.43<br>(lim = 1.60) | 1.55<br>(lim = 1.60) |
| S72 | 0.84<br>1.57 | 1.12<br>3.03  | 81.26<br>100.69  | 1.11<br>(lim = 1.60) | 1.25<br>(lim = 1.60) | 1.54<br>(lim = 1.60) | 1.40<br>(lim = 1.60) |
| S73 | 1.11<br>3.64 | 1.26<br>6.45  | 111.00<br>137.37 | 1.14<br>(lim = 1.60) | 1.02<br>(lim = 1.60) | 1.43<br>(lim = 1.60) | 1.54<br>(lim = 1.60) |

|      |              |               |                  |                      |                      |                      |                      |
|------|--------------|---------------|------------------|----------------------|----------------------|----------------------|----------------------|
| S74  | 0.56<br>4.05 | 0.32<br>7.58  | 112.54<br>139.57 | 1.17<br>(lim = 1.60) | 1.10<br>(lim = 1.60) | 1.50<br>(lim = 1.60) | 1.57<br>(lim = 1.60) |
| S75  | 1.69<br>3.32 | 2.29<br>6.00  | 117.70<br>145.47 | 1.11<br>(lim = 1.60) | 1.23<br>(lim = 1.60) | 1.53<br>(lim = 1.60) | 1.41<br>(lim = 1.60) |
| S76  | 2.40<br>2.31 | 4.39<br>3.60  | 135.66<br>164.82 | 1.45<br>(lim = 1.60) | 1.26<br>(lim = 1.60) | 1.39<br>(lim = 1.60) | 1.58<br>(lim = 1.60) |
| S77  | 0.68<br>1.70 | 1.04<br>2.90  | 135.74<br>164.25 | 1.38<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.59<br>(lim = 1.60) | 1.51<br>(lim = 1.60) |
| S78  | 0.62<br>1.71 | 0.52<br>2.96  | 123.19<br>150.23 | 1.41<br>(lim = 1.60) | 1.33<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.54<br>(lim = 1.60) |
| S79  | 0.78<br>1.56 | 0.44<br>2.62  | 155.51<br>188.28 | 1.39<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 1.51<br>(lim = 1.60) |
| S80  | 0.77<br>1.60 | 0.52<br>2.70  | 153.19<br>185.97 | 1.37<br>(lim = 1.60) | 1.44<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.49<br>(lim = 1.60) |
| S81  | 2.64<br>1.95 | 3.62<br>2.91  | 119.92<br>146.29 | 1.19<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.59<br>(lim = 1.60) | 1.33<br>(lim = 1.60) |
| S82  | 7.41<br>1.73 | 12.87<br>1.59 | 96.88<br>125.01  | 1.58<br>(lim = 1.60) | 0.82<br>(lim = 1.60) | 0.69<br>(lim = 1.60) | 1.44<br>(lim = 1.60) |
| S83  | 1.72<br>0.60 | 2.40<br>0.40  | 29.52<br>38.62   | 1.29<br>(lim = 1.60) | 0.48<br>(lim = 1.60) | 0.68<br>(lim = 1.60) | 1.50<br>(lim = 1.60) |
| S86  | 2.87<br>2.66 | 5.02<br>5.04  | 185.59<br>225.66 | 1.59<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.30<br>(lim = 1.60) | 1.42<br>(lim = 1.60) |
| S87  | 2.88<br>5.13 | 5.49<br>9.20  | 262.65<br>320.79 | 1.46<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.39<br>(lim = 1.60) | 1.30<br>(lim = 1.60) |
| S88  | 0.74<br>5.04 | 1.27<br>9.45  | 118.88<br>148.72 | 1.54<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.05<br>(lim = 1.60) | 1.11<br>(lim = 1.60) |
| S89  | 3.69<br>5.78 | 7.09<br>1.15  | 248.98<br>305.13 | 1.42<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.38<br>(lim = 1.60) | 1.25<br>(lim = 1.60) |
| S90  | 2.51<br>4.03 | 3.76<br>6.50  | 236.67<br>287.13 | 1.59<br>(lim = 1.60) | 1.49<br>(lim = 1.60) | 1.34<br>(lim = 1.60) | 1.44<br>(lim = 1.60) |
| S91  | 1.50<br>5.82 | 1.45<br>2.12  | 149.72<br>184.84 | 1.49<br>(lim = 1.60) | 1.60<br>(lim = 1.60) | 1.19<br>(lim = 1.60) | 1.08<br>(lim = 1.60) |
| S92  | 1.93<br>5.80 | 2.42<br>2.11  | 185.14<br>228.46 | 1.55<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.15<br>(lim = 1.60) | 1.25<br>(lim = 1.60) |
| S93  | 1.80<br>4.90 | 1.98<br>8.47  | 180.25<br>220.19 | 1.48<br>(lim = 1.60) | 1.59<br>(lim = 1.60) | 1.33<br>(lim = 1.60) | 1.22<br>(lim = 1.60) |
| S94  | 1.78<br>4.81 | 1.91<br>8.22  | 178.10<br>218.04 | 1.47<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.32<br>(lim = 1.60) | 1.22<br>(lim = 1.60) |
| S95  | 4.80<br>2.10 | 8.88<br>2.26  | 209.61<br>256.44 | 1.55<br>(lim = 1.60) | 1.35<br>(lim = 1.60) | 1.25<br>(lim = 1.60) | 1.45<br>(lim = 1.60) |
| S96  | 2.80<br>2.34 | 4.25<br>1.68  | 234.40<br>284.86 | 1.45<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.35<br>(lim = 1.60) |
| S97  | 3.48<br>4.15 | 5.82<br>6.60  | 178.59<br>218.54 | 1.38<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.42<br>(lim = 1.60) | 1.23<br>(lim = 1.60) |
| S98  | 0.86<br>1.72 | 0.08<br>1.53  | 172.23<br>212.11 | 1.33<br>(lim = 1.60) | 1.39<br>(lim = 1.60) | 1.50<br>(lim = 1.60) | 1.44<br>(lim = 1.60) |
| S99  | 0.85<br>1.70 | 0.06<br>1.55  | 169.86<br>206.49 | 1.47<br>(lim = 1.60) | 1.40<br>(lim = 1.60) | 1.52<br>(lim = 1.60) | 1.59<br>(lim = 1.60) |
| S100 | 3.53<br>4.80 | 8.38<br>7.80  | 98.97<br>125.65  | 1.05<br>(lim = 1.60) | 0.79<br>(lim = 1.60) | 1.34<br>(lim = 1.60) | 1.60<br>(lim = 1.60) |
| S101 | 2.00<br>9.40 | 1.43<br>0.82  | 101.59<br>132.42 | 0.61<br>(lim = 1.60) | 0.73<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 1.45<br>(lim = 1.60) |

|      |              |              |                  |                      |                      |                      |                      |
|------|--------------|--------------|------------------|----------------------|----------------------|----------------------|----------------------|
| S104 | 2.55<br>2.44 | 4.57<br>4.80 | 142.17<br>174.95 | 1.35<br>(lim = 1.60) | 1.20<br>(lim = 1.60) | 1.41<br>(lim = 1.60) | 1.56<br>(lim = 1.60) |
| S105 | 3.40<br>5.94 | 6.04<br>9.95 | 168.29<br>208.24 | 1.07<br>(lim = 1.60) | 1.21<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.41<br>(lim = 1.60) |
| S106 | 0.63<br>4.98 | 1.09<br>9.30 | 101.03<br>128.07 | 1.00<br>(lim = 1.60) | 0.94<br>(lim = 1.60) | 1.44<br>(lim = 1.60) | 1.50<br>(lim = 1.60) |
| S107 | 2.29<br>2.29 | 1.30<br>3.50 | 229.05<br>277.67 | 1.46<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.36<br>(lim = 1.60) |
| S108 | 2.66<br>2.83 | 4.21<br>3.82 | 265.63<br>321.79 | 1.38<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.48<br>(lim = 1.60) |
| S109 | 1.96<br>4.51 | 1.87<br>8.50 | 196.08<br>240.63 | 1.49<br>(lim = 1.60) | 1.60<br>(lim = 1.60) | 1.36<br>(lim = 1.60) | 1.25<br>(lim = 1.60) |
| S110 | 2.07<br>4.43 | 2.71<br>8.29 | 206.66<br>254.33 | 1.55<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.24<br>(lim = 1.60) | 1.34<br>(lim = 1.60) |
| S111 | 2.23<br>3.40 | 3.63<br>5.07 | 204.46<br>247.78 | 1.35<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.46<br>(lim = 1.60) |
| S112 | 3.49<br>2.89 | 6.23<br>4.52 | 212.93<br>259.76 | 1.45<br>(lim = 1.60) | 1.29<br>(lim = 1.60) | 1.40<br>(lim = 1.60) | 1.55<br>(lim = 1.60) |
| S113 | 2.16<br>1.90 | 3.37<br>2.12 | 189.69<br>229.64 | 1.47<br>(lim = 1.60) | 1.35<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.59<br>(lim = 1.60) |
| S114 | 2.07<br>1.87 | 3.15<br>1.97 | 187.03<br>226.97 | 1.34<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.45<br>(lim = 1.60) |
| S115 | 3.98<br>4.34 | 7.22<br>7.95 | 137.10<br>170.69 | 1.01<br>(lim = 1.60) | 1.31<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.27<br>(lim = 1.60) |
| S116 | 1.41<br>1.44 | 2.11<br>1.94 | 140.85<br>171.43 | 1.42<br>(lim = 1.60) | 1.29<br>(lim = 1.60) | 1.42<br>(lim = 1.60) | 1.54<br>(lim = 1.60) |
| S117 | 0.38<br>0.78 | 0.45<br>1.28 | 6.96<br>13.22    | 0.60<br>(lim = 1.60) | 0.57<br>(lim = 1.60) | 0.14<br>(lim = 1.60) | 0.16<br>(lim = 1.60) |
| S118 | 0.34<br>1.42 | 0.35<br>2.60 | 10.54<br>16.81   | 0.84<br>(lim = 1.60) | 0.87<br>(lim = 1.60) | 0.08<br>(lim = 1.60) | 0.05<br>(lim = 1.60) |
| S119 | 0.38<br>0.78 | 0.45<br>1.28 | 6.96<br>13.22    | 0.57<br>(lim = 1.60) | 0.60<br>(lim = 1.60) | 0.16<br>(lim = 1.60) | 0.14<br>(lim = 1.60) |
| S120 | 0.38<br>0.78 | 0.45<br>1.28 | 6.96<br>13.22    | 0.60<br>(lim = 1.60) | 0.57<br>(lim = 1.60) | 0.14<br>(lim = 1.60) | 0.16<br>(lim = 1.60) |
| S121 | 0.34<br>1.42 | 0.35<br>2.60 | 10.54<br>16.81   | 0.84<br>(lim = 1.60) | 0.87<br>(lim = 1.60) | 0.08<br>(lim = 1.60) | 0.05<br>(lim = 1.60) |
| S122 | 0.38<br>0.78 | 0.45<br>1.28 | 6.96<br>13.22    | 0.57<br>(lim = 1.60) | 0.60<br>(lim = 1.60) | 0.16<br>(lim = 1.60) | 0.14<br>(lim = 1.60) |
| S123 | 2.64<br>3.09 | 1.88<br>4.65 | 263.52<br>320.63 | 1.57<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.37<br>(lim = 1.60) | 1.47<br>(lim = 1.60) |
| S130 | 2.27<br>3.54 | 2.19<br>5.44 | 227.33<br>276.80 | 1.58<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.34<br>(lim = 1.60) | 1.44<br>(lim = 1.60) |
| S131 | 2.73<br>3.78 | 4.78<br>5.69 | 230.28<br>278.90 | 1.58<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.37<br>(lim = 1.60) | 1.47<br>(lim = 1.60) |
| S132 | 2.20<br>6.38 | 3.15<br>9.02 | 203.05<br>249.87 | 1.46<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.28<br>(lim = 1.60) | 1.19<br>(lim = 1.60) |
| S133 | 1.92<br>6.40 | 1.84<br>8.96 | 192.23<br>239.06 | 1.50<br>(lim = 1.60) | 1.40<br>(lim = 1.60) | 1.13<br>(lim = 1.60) | 1.22<br>(lim = 1.60) |
| S134 | 1.96<br>6.81 | 1.31<br>9.64 | 196.19<br>241.23 | 1.49<br>(lim = 1.60) | 1.59<br>(lim = 1.60) | 1.26<br>(lim = 1.60) | 1.16<br>(lim = 1.60) |
| S135 | 2.72<br>5.69 | 4.48<br>9.76 | 125.52<br>157.59 | 1.39<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.10<br>(lim = 1.60) | 0.94<br>(lim = 1.60) |

|      |              |               |                  |                      |                      |                      |                      |
|------|--------------|---------------|------------------|----------------------|----------------------|----------------------|----------------------|
| S142 | 0.38<br>0.78 | 0.45<br>1.28  | 6.96<br>13.22    | 0.16<br>(lim = 1.60) | 0.14<br>(lim = 1.60) | 0.57<br>(lim = 1.60) | 0.60<br>(lim = 1.60) |
| S143 | 0.34<br>1.42 | 0.35<br>2.60  | 10.54<br>16.81   | 0.08<br>(lim = 1.60) | 0.05<br>(lim = 1.60) | 0.84<br>(lim = 1.60) | 0.87<br>(lim = 1.60) |
| S144 | 0.38<br>0.78 | 0.45<br>1.28  | 6.96<br>13.22    | 0.14<br>(lim = 1.60) | 0.16<br>(lim = 1.60) | 0.60<br>(lim = 1.60) | 0.57<br>(lim = 1.60) |
| S145 | 0.38<br>0.78 | 0.45<br>1.28  | 6.96<br>13.22    | 0.16<br>(lim = 1.60) | 0.14<br>(lim = 1.60) | 0.57<br>(lim = 1.60) | 0.60<br>(lim = 1.60) |
| S146 | 0.34<br>1.42 | 0.35<br>2.60  | 10.54<br>16.81   | 0.05<br>(lim = 1.60) | 0.08<br>(lim = 1.60) | 0.87<br>(lim = 1.60) | 0.84<br>(lim = 1.60) |
| S147 | 0.38<br>0.78 | 0.45<br>1.28  | 6.96<br>13.22    | 0.14<br>(lim = 1.60) | 0.16<br>(lim = 1.60) | 0.60<br>(lim = 1.60) | 0.57<br>(lim = 1.60) |
| S150 | 1.59<br>1.59 | 2.49<br>1.10  | 159.05<br>192.63 | 1.45<br>(lim = 1.60) | 1.33<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.58<br>(lim = 1.60) |
| S153 | 2.16<br>2.00 | 3.67<br>2.20  | 69.83<br>87.70   | 1.54<br>(lim = 1.60) | 1.28<br>(lim = 1.60) | 0.89<br>(lim = 1.60) | 1.15<br>(lim = 1.60) |
| S154 | 1.66<br>1.37 | 2.01<br>1.54  | 109.86<br>133.81 | 1.43<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.39<br>(lim = 1.60) | 1.25<br>(lim = 1.60) |
| S155 | 2.19<br>1.89 | 3.74<br>2.27  | 118.90<br>145.27 | 1.56<br>(lim = 1.60) | 1.42<br>(lim = 1.60) | 1.21<br>(lim = 1.60) | 1.34<br>(lim = 1.60) |
| S156 | 3.15<br>2.58 | 5.07<br>3.25  | 115.99<br>143.76 | 1.33<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.28<br>(lim = 1.60) | 1.06<br>(lim = 1.60) |
| S157 | 3.69<br>1.80 | 6.65<br>2.11  | 122.79<br>151.94 | 1.53<br>(lim = 1.60) | 1.28<br>(lim = 1.60) | 1.10<br>(lim = 1.60) | 1.36<br>(lim = 1.60) |
| S158 | 4.95<br>1.47 | 8.92<br>1.63  | 95.22<br>119.17  | 1.11<br>(lim = 1.60) | 1.60<br>(lim = 1.60) | 1.40<br>(lim = 1.60) | 0.91<br>(lim = 1.60) |
| S159 | 4.81<br>1.32 | 8.71<br>1.36  | 128.71<br>159.33 | 1.54<br>(lim = 1.60) | 1.12<br>(lim = 1.60) | 1.01<br>(lim = 1.60) | 1.43<br>(lim = 1.60) |
| S160 | 3.29<br>6.65 | 5.54<br>11.43 | 235.83<br>290.07 | 1.21<br>(lim = 1.60) | 1.30<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.46<br>(lim = 1.60) |
| S164 | 1.62<br>2.56 | 2.14<br>3.92  | 162.05<br>198.20 | 1.28<br>(lim = 1.60) | 1.40<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 1.46<br>(lim = 1.60) |
| S165 | 1.95<br>3.21 | 2.78<br>5.20  | 168.58<br>206.36 | 1.38<br>(lim = 1.60) | 1.26<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.59<br>(lim = 1.60) |
| S169 | 3.00<br>6.38 | 5.03<br>11.04 | 160.15<br>198.44 | 1.07<br>(lim = 1.60) | 1.24<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 1.40<br>(lim = 1.60) |
| S170 | 2.68<br>4.88 | 4.81<br>8.99  | 186.61<br>228.21 | 1.37<br>(lim = 1.60) | 1.24<br>(lim = 1.60) | 1.44<br>(lim = 1.60) | 1.57<br>(lim = 1.60) |
| S171 | 2.35<br>3.11 | 2.91<br>6.84  | 235.18<br>285.64 | 1.35<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.46<br>(lim = 1.60) |
| S172 | 2.26<br>2.93 | 1.47<br>6.56  | 225.76<br>274.38 | 1.35<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.45<br>(lim = 1.60) |
| S173 | 2.53<br>3.06 | 1.70<br>7.02  | 252.53<br>306.77 | 1.36<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.46<br>(lim = 1.60) |
| S174 | 2.32<br>4.41 | 3.66<br>8.09  | 158.60<br>193.71 | 1.22<br>(lim = 1.60) | 1.37<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 1.43<br>(lim = 1.60) |
| S175 | 3.21<br>4.33 | 0.71<br>6.92  | 122.20<br>151.35 | 1.59<br>(lim = 1.60) | 1.30<br>(lim = 1.60) | 1.01<br>(lim = 1.60) | 1.30<br>(lim = 1.60) |
| S176 | 1.48<br>2.10 | 1.26<br>2.95  | 147.63<br>179.70 | 1.30<br>(lim = 1.60) | 1.42<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.42<br>(lim = 1.60) |
| S177 | 2.88<br>3.60 | 2.04<br>5.43  | 207.32<br>252.36 | 1.55<br>(lim = 1.60) | 1.41<br>(lim = 1.60) | 1.31<br>(lim = 1.60) | 1.44<br>(lim = 1.60) |

|      |              |                |                  |                      |                      |                      |                      |
|------|--------------|----------------|------------------|----------------------|----------------------|----------------------|----------------------|
| S178 | 2.97<br>4.28 | 0.62<br>6.44   | 202.44<br>245.76 | 1.43<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.30<br>(lim = 1.60) |
| S179 | 3.76<br>3.67 | 2.49<br>5.55   | 231.54<br>282.01 | 1.56<br>(lim = 1.60) | 1.40<br>(lim = 1.60) | 1.30<br>(lim = 1.60) | 1.46<br>(lim = 1.60) |
| S180 | 2.10<br>3.53 | 1.15<br>5.87   | 209.53<br>254.57 | 1.45<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.34<br>(lim = 1.60) |
| S181 | 6.50<br>3.67 | 12.71<br>5.94  | 244.32<br>298.56 | 1.56<br>(lim = 1.60) | 1.36<br>(lim = 1.60) | 1.26<br>(lim = 1.60) | 1.47<br>(lim = 1.60) |
| S182 | 6.30<br>8.01 | 11.91<br>14.21 | 238.92<br>295.08 | 1.39<br>(lim = 1.60) | 1.59<br>(lim = 1.60) | 1.32<br>(lim = 1.60) | 1.13<br>(lim = 1.60) |
| S183 | 1.21<br>2.29 | 1.48<br>1.03   | 99.96<br>122.64  | 1.41<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.23<br>(lim = 1.60) | 1.09<br>(lim = 1.60) |
| S184 | 1.66<br>2.85 | 1.79<br>4.41   | 165.66<br>202.37 | 1.38<br>(lim = 1.60) | 1.26<br>(lim = 1.60) | 1.43<br>(lim = 1.60) | 1.55<br>(lim = 1.60) |
| S185 | 1.69<br>4.29 | 1.68<br>7.34   | 169.09<br>207.38 | 1.45<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.31<br>(lim = 1.60) | 1.20<br>(lim = 1.60) |
| S186 | 2.12<br>2.12 | 2.68<br>6.48   | 212.20<br>257.24 | 1.57<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.35<br>(lim = 1.60) | 1.46<br>(lim = 1.60) |
| S187 | 2.32<br>3.08 | 1.02<br>5.40   | 231.55<br>280.16 | 1.48<br>(lim = 1.60) | 1.59<br>(lim = 1.60) | 1.48<br>(lim = 1.60) | 1.37<br>(lim = 1.60) |
| S188 | 2.26<br>2.91 | 1.38<br>5.08   | 226.02<br>276.48 | 1.41<br>(lim = 1.60) | 1.51<br>(lim = 1.60) | 1.41<br>(lim = 1.60) | 1.31<br>(lim = 1.60) |
| S189 | 0.62<br>1.25 | 0.55<br>1.47   | 124.56<br>151.60 | 1.54<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.34<br>(lim = 1.60) | 1.42<br>(lim = 1.60) |
| S190 | 2.70<br>7.44 | 4.70<br>13.02  | 171.17<br>212.77 | 1.41<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.21<br>(lim = 1.60) | 1.07<br>(lim = 1.60) |
| S191 | 1.16<br>0.70 | 2.91<br>0.59   | 139.54<br>169.52 | 1.45<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.48<br>(lim = 1.60) | 1.38<br>(lim = 1.60) |
| S192 | 1.62<br>0.81 | 5.71<br>0.44   | 162.36<br>196.12 | 1.51<br>(lim = 1.60) | 1.39<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.58<br>(lim = 1.60) |
| S193 | 1.91<br>0.51 | 3.25<br>0.90   | 82.73<br>102.16  | 1.54<br>(lim = 1.60) | 1.23<br>(lim = 1.60) | 1.15<br>(lim = 1.60) | 1.45<br>(lim = 1.60) |
| S194 | 1.42<br>0.59 | 2.58<br>0.65   | 118.03<br>143.60 | 1.42<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.48<br>(lim = 1.60) | 1.34<br>(lim = 1.60) |
| S195 | 0.58<br>0.18 | 0.94<br>0.09   | 9.10<br>17.99    | 0.36<br>(lim = 1.60) | 0.68<br>(lim = 1.60) | 0.63<br>(lim = 1.60) | 0.32<br>(lim = 1.60) |
| S196 | 1.37<br>2.24 | 2.83<br>2.10   | 224.28<br>273.46 | 1.43<br>(lim = 1.60) | 1.37<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.53<br>(lim = 1.60) |
| S197 | 2.61<br>3.06 | 4.19<br>5.65   | 135.80<br>166.41 | 1.40<br>(lim = 1.60) | 1.19<br>(lim = 1.60) | 1.34<br>(lim = 1.60) | 1.56<br>(lim = 1.60) |
| S198 | 1.51<br>1.56 | 1.90<br>1.13   | 120.95<br>147.32 | 1.40<br>(lim = 1.60) | 1.26<br>(lim = 1.60) | 1.40<br>(lim = 1.60) | 1.53<br>(lim = 1.60) |
| S199 | 2.49<br>3.30 | 3.63<br>5.63   | 249.24<br>301.56 | 1.48<br>(lim = 1.60) | 1.38<br>(lim = 1.60) | 1.49<br>(lim = 1.60) | 1.59<br>(lim = 1.60) |
| S200 | 2.57<br>3.36 | 2.91<br>6.35   | 257.02<br>311.26 | 1.38<br>(lim = 1.60) | 1.48<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 1.48<br>(lim = 1.60) |
| S201 | 4.32<br>3.28 | 7.20<br>5.55   | 273.88<br>332.02 | 1.49<br>(lim = 1.60) | 1.36<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.59<br>(lim = 1.60) |
| S202 | 5.33<br>4.70 | 10.44<br>8.05  | 211.25<br>259.86 | 1.18<br>(lim = 1.60) | 1.40<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.35<br>(lim = 1.60) |
| S203 | 1.62<br>1.62 | 2.53<br>1.96   | 162.43<br>197.54 | 1.43<br>(lim = 1.60) | 1.31<br>(lim = 1.60) | 1.43<br>(lim = 1.60) | 1.55<br>(lim = 1.60) |

|      |              |                |                  |                      |                      |                      |                      |
|------|--------------|----------------|------------------|----------------------|----------------------|----------------------|----------------------|
| S204 | 7.07<br>7.32 | 11.91<br>13.72 | 200.08<br>250.55 | 1.31<br>(lim = 1.60) | 1.00<br>(lim = 1.60) | 1.25<br>(lim = 1.60) | 1.55<br>(lim = 1.60) |
| S205 | 4.89<br>2.56 | 10.42<br>1.36  | 256.01<br>312.17 | 1.30<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.40<br>(lim = 1.60) |
| S206 | 4.49<br>3.82 | 10.25<br>6.18  | 309.36<br>376.24 | 1.49<br>(lim = 1.60) | 1.36<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.58<br>(lim = 1.60) |
| S207 | 6.57<br>8.92 | 10.70<br>3.05  | 163.82<br>210.65 | 0.80<br>(lim = 1.60) | 1.11<br>(lim = 1.60) | 1.50<br>(lim = 1.60) | 1.19<br>(lim = 1.60) |
| S208 | 1.89<br>4.92 | 1.50<br>7.45   | 164.70<br>202.99 | 1.16<br>(lim = 1.60) | 1.27<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.44<br>(lim = 1.60) |
| S209 | 2.24<br>4.57 | 2.78<br>6.69   | 223.70<br>272.31 | 1.40<br>(lim = 1.60) | 1.30<br>(lim = 1.60) | 1.48<br>(lim = 1.60) | 1.58<br>(lim = 1.60) |
| S210 | 1.19<br>1.53 | 2.12<br>3.67   | 152.80<br>185.57 | 1.36<br>(lim = 1.60) | 1.45<br>(lim = 1.60) | 1.57<br>(lim = 1.60) | 1.48<br>(lim = 1.60) |
| S211 | 2.08<br>6.86 | 1.83<br>13.64  | 88.99<br>115.37  | 0.64<br>(lim = 1.60) | 0.86<br>(lim = 1.60) | 1.53<br>(lim = 1.60) | 1.30<br>(lim = 1.60) |
| S212 | 2.63<br>5.44 | 4.68<br>8.78   | 118.08<br>148.69 | 1.53<br>(lim = 1.60) | 1.35<br>(lim = 1.60) | 0.86<br>(lim = 1.60) | 1.04<br>(lim = 1.60) |
| S213 | 2.64<br>6.84 | 4.08<br>12.52  | 155.73<br>194.02 | 1.44<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.10<br>(lim = 1.60) | 1.00<br>(lim = 1.60) |
| S214 | 1.49<br>4.40 | 2.36<br>6.89   | 130.50<br>161.11 | 1.55<br>(lim = 1.60) | 1.43<br>(lim = 1.60) | 1.07<br>(lim = 1.60) | 1.19<br>(lim = 1.60) |
| S215 | 1.85<br>2.21 | 3.22<br>4.49   | 184.80<br>224.81 | 1.55<br>(lim = 1.60) | 1.44<br>(lim = 1.60) | 1.33<br>(lim = 1.60) | 1.44<br>(lim = 1.60) |
| S216 | 3.62<br>3.75 | 6.31<br>5.73   | 174.28<br>214.23 | 1.37<br>(lim = 1.60) | 1.54<br>(lim = 1.60) | 1.33<br>(lim = 1.60) | 1.16<br>(lim = 1.60) |
| S217 | 1.24<br>1.63 | 1.85<br>3.26   | 124.49<br>151.53 | 1.59<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.31<br>(lim = 1.60) | 1.44<br>(lim = 1.60) |
| S218 | 1.93<br>4.73 | 0.86<br>8.59   | 193.07<br>236.39 | 1.46<br>(lim = 1.60) | 1.56<br>(lim = 1.60) | 1.34<br>(lim = 1.60) | 1.23<br>(lim = 1.60) |
| S219 | 1.26<br>0.63 | 0.84<br>1.11   | 126.41<br>153.45 | 1.57<br>(lim = 1.60) | 1.44<br>(lim = 1.60) | 1.36<br>(lim = 1.60) | 1.50<br>(lim = 1.60) |
| S220 | 0.65<br>1.21 | 1.34<br>2.07   | 82.96<br>102.39  | 1.22<br>(lim = 1.60) | 1.34<br>(lim = 1.60) | 1.47<br>(lim = 1.60) | 1.35<br>(lim = 1.60) |
| S221 | 0.47<br>0.96 | 1.26<br>1.90   | 93.41<br>115.24  | 1.32<br>(lim = 1.60) | 1.25<br>(lim = 1.60) | 1.38<br>(lim = 1.60) | 1.45<br>(lim = 1.60) |
| S222 | 1.74<br>2.59 | 1.70<br>4.22   | 173.71<br>210.42 | 1.46<br>(lim = 1.60) | 1.34<br>(lim = 1.60) | 1.46<br>(lim = 1.60) | 1.58<br>(lim = 1.60) |
| S223 | 2.44<br>2.16 | 4.01<br>5.42   | 132.22<br>162.83 | 1.31<br>(lim = 1.60) | 1.18<br>(lim = 1.60) | 1.36<br>(lim = 1.60) | 1.49<br>(lim = 1.60) |
| S224 | 1.87<br>2.04 | 3.06<br>3.08   | 122.66<br>150.42 | 1.19<br>(lim = 1.60) | 1.32<br>(lim = 1.60) | 1.53<br>(lim = 1.60) | 1.41<br>(lim = 1.60) |
| S225 | 1.45<br>3.74 | 2.06<br>1.26   | 98.74<br>123.79  | 0.94<br>(lim = 1.60) | 1.06<br>(lim = 1.60) | 1.51<br>(lim = 1.60) | 1.39<br>(lim = 1.60) |
| S226 | 1.27<br>2.67 | 1.51<br>1.05   | 93.48<br>116.17  | 1.15<br>(lim = 1.60) | 1.02<br>(lim = 1.60) | 1.39<br>(lim = 1.60) | 1.52<br>(lim = 1.60) |
| S227 | 1.15<br>2.52 | 1.02<br>2.90   | 76.84<br>95.25   | 0.94<br>(lim = 1.60) | 1.09<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.40<br>(lim = 1.60) |
| S228 | 2.30<br>4.59 | 3.73<br>9.16   | 95.87<br>120.92  | 1.03<br>(lim = 1.60) | 0.84<br>(lim = 1.60) | 1.38<br>(lim = 1.60) | 1.58<br>(lim = 1.60) |
| S229 | 1.97<br>6.99 | 2.86<br>12.63  | 131.41<br>165.00 | 0.92<br>(lim = 1.60) | 1.02<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.45<br>(lim = 1.60) |

|          |                |               |                  |                      |                      |                      |                       |
|----------|----------------|---------------|------------------|----------------------|----------------------|----------------------|-----------------------|
| S230     | 1.64<br>3.94   | 2.46<br>6.66  | 131.70<br>162.31 | 1.22<br>(lim = 1.60) | 1.10<br>(lim = 1.60) | 1.43<br>(lim = 1.60) | 1.55<br>(lim = 1.60)  |
| S231     | 2.62<br>6.20   | 4.37<br>8.90  | 211.65<br>262.12 | 1.25<br>(lim = 1.60) | 1.16<br>(lim = 1.60) | 1.42<br>(lim = 1.60) | 1.51<br>(lim = 1.60)  |
| S232     | 3.69<br>3.51   | 6.77<br>5.71  | 183.87<br>227.19 | 1.17<br>(lim = 1.60) | 1.32<br>(lim = 1.60) | 1.49<br>(lim = 1.60) | 1.33<br>(lim = 1.60)  |
| S233     | 2.27<br>7.27   | 3.44<br>10.69 | 157.74<br>197.69 | 1.09<br>(lim = 1.60) | 1.00<br>(lim = 1.60) | 1.44<br>(lim = 1.60) | 1.53<br>(lim = 1.60)  |
| S234     | 1.70<br>5.99   | 2.96<br>9.88  | 151.68<br>188.39 | 1.04<br>(lim = 1.60) | 1.14<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.44<br>(lim = 1.60)  |
| S235     | 1.08<br>1.92   | 1.61<br>2.88  | 69.31<br>86.04   | 0.98<br>(lim = 1.60) | 1.13<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.40<br>(lim = 1.60)  |
| S84-85   | 18.44<br>17.98 | 12.67<br>9.15 | 206.20<br>271.30 | 1.04<br>(lim = 1.60) | 1.55<br>(lim = 1.60) | 1.05<br>(lim = 1.60) | 0.54<br>(lim = 1.60)  |
| S102-103 | 7.99<br>21.80  | 8.44<br>16.55 | 179.56<br>242.54 | 0.53<br>(lim = 1.60) | 0.73<br>(lim = 1.60) | 1.58<br>(lim = 1.60) | 1.38<br>(lim = 1.60)  |
| SM1      | 18.44<br>2.68  | 3.64<br>5.23  | 61.95<br>102.24  | 0.07<br>(lim = 1.60) | 1.00<br>(lim = 1.60) | 0.92<br>(lim = 1.60) | -0.01<br>(lim = 1.60) |
| SM2      | 18.44<br>2.68  | 3.64<br>5.23  | 61.95<br>102.24  | 0.07<br>(lim = 1.60) | 1.00<br>(lim = 1.60) | 0.92<br>(lim = 1.60) | -0.01<br>(lim = 1.60) |

## Estabilidade

| Nome | Tombamento B         |                        | Tombamento H         |                       | Deslizamento       |                       | Arrancamento |            |
|------|----------------------|------------------------|----------------------|-----------------------|--------------------|-----------------------|--------------|------------|
|      | Mrd<br>Msd<br>(kN.m) | Mrd / Msd              | Mrd<br>Msd<br>(kN.m) | Mrd / Msd             | Frd<br>Fsd<br>(kN) | Frd / Fsd             | Nt<br>(kN)   | Ns<br>(kN) |
| S1   | 51.51<br>2.06        | 24.98<br>(lim = 1.50)  | 51.85<br>2.81        | 18.46<br>(lim = 1.50) | 39.95<br>4.85      | 8.25<br>lim = (1.50)  |              |            |
| S2   | 70.54<br>0.61        | 116.15<br>(lim = 1.50) | 73.70<br>2.12        | 34.69<br>(lim = 1.50) | 49.04<br>3.30      | 14.86<br>lim = (1.50) |              |            |
| S3   | 66.66<br>0.57        | 117.67<br>(lim = 1.50) | 69.84<br>1.99        | 35.15<br>(lim = 1.50) | 46.47<br>3.10      | 14.97<br>lim = (1.50) |              |            |
| S4   | 106.38<br>3.03       | 35.13<br>(lim = 1.50)  | 107.82<br>2.94       | 36.65<br>(lim = 1.50) | 64.88<br>5.95      | 10.91<br>lim = (1.50) |              |            |
| S5   | 133.01<br>2.34       | 56.91<br>(lim = 1.50)  | 128.99<br>2.77       | 46.56<br>(lim = 1.50) | 74.89<br>4.15      | 18.03<br>lim = (1.50) |              |            |
| S6   | 71.01<br>1.28        | 55.59<br>(lim = 1.50)  | 71.92<br>2.81        | 25.58<br>(lim = 1.50) | 50.13<br>3.91      | 12.82<br>lim = (1.50) |              |            |
| S7   | 46.57<br>1.57        | 29.74<br>(lim = 1.50)  | 47.41<br>2.99        | 15.88<br>(lim = 1.50) | 36.25<br>5.40      | 6.71<br>lim = (1.50)  |              |            |
| S8   | 76.04<br>0.97        | 78.64<br>(lim = 1.50)  | 89.05<br>2.70        | 32.97<br>(lim = 1.50) | 56.67<br>4.81      | 11.79<br>lim = (1.50) |              |            |
| S9   | 101.38<br>3.02       | 33.53<br>(lim = 1.50)  | 103.73<br>2.81       | 36.95<br>(lim = 1.50) | 64.52<br>6.27      | 10.30<br>lim = (1.50) |              |            |
| S10  | 101.16<br>4.14       | 24.43<br>(lim = 1.50)  | 101.38<br>4.39       | 23.09<br>(lim = 1.50) | 61.70<br>8.36      | 7.38<br>lim = (1.50)  |              |            |
| S11  | 65.86<br>4.21        | 15.63<br>(lim = 1.50)  | 63.53<br>2.57        | 24.74<br>(lim = 1.50) | 45.85<br>8.64      | 5.31<br>lim = (1.50)  |              |            |

|     |                |                        |                |                        |                |                       |  |  |
|-----|----------------|------------------------|----------------|------------------------|----------------|-----------------------|--|--|
| S12 | 61.05<br>1.35  | 45.32<br>(lim = 1.50)  | 54.50<br>0.53  | 103.55<br>(lim = 1.50) | 42.55<br>2.25  | 18.94<br>lim = (1.50) |  |  |
| S13 | 111.84<br>0.84 | 133.19<br>(lim = 1.50) | 127.09<br>1.68 | 75.67<br>(lim = 1.50)  | 62.25<br>2.26  | 27.55<br>lim = (1.50) |  |  |
| S14 | 83.70<br>0.69  | 121.69<br>(lim = 1.50) | 82.00<br>1.32  | 62.25<br>(lim = 1.50)  | 52.19<br>2.29  | 22.77<br>lim = (1.50) |  |  |
| S15 | 141.58<br>0.97 | 145.87<br>(lim = 1.50) | 159.28<br>1.94 | 82.05<br>(lim = 1.50)  | 70.33<br>1.82  | 38.72<br>lim = (1.50) |  |  |
| S16 | 106.61<br>0.79 | 134.58<br>(lim = 1.50) | 121.15<br>1.58 | 76.47<br>(lim = 1.50)  | 59.08<br>2.29  | 25.84<br>lim = (1.50) |  |  |
| S17 | 25.48<br>0.75  | 34.19<br>(lim = 1.50)  | 19.97<br>1.24  | 16.05<br>(lim = 1.50)  | 22.48<br>2.20  | 10.20<br>lim = (1.50) |  |  |
| S18 | 109.96<br>0.86 | 127.57<br>(lim = 1.50) | 125.78<br>2.14 | 58.83<br>(lim = 1.50)  | 70.81<br>4.11  | 17.22<br>lim = (1.50) |  |  |
| S19 | 106.35<br>3.36 | 31.68<br>(lim = 1.50)  | 104.00<br>2.30 | 45.21<br>(lim = 1.50)  | 64.87<br>6.27  | 10.35<br>lim = (1.50) |  |  |
| S20 | 123.44<br>3.07 | 40.20<br>(lim = 1.50)  | 120.44<br>2.14 | 56.35<br>(lim = 1.50)  | 72.27<br>6.01  | 12.02<br>lim = (1.50) |  |  |
| S21 | 86.64<br>3.86  | 22.43<br>(lim = 1.50)  | 86.04<br>1.47  | 58.33<br>(lim = 1.50)  | 57.60<br>6.60  | 8.73<br>lim = (1.50)  |  |  |
| S22 | 116.79<br>6.35 | 18.40<br>(lim = 1.50)  | 116.87<br>2.83 | 41.28<br>(lim = 1.50)  | 68.32<br>12.07 | 5.66<br>lim = (1.50)  |  |  |
| S23 | 143.03<br>4.98 | 28.70<br>(lim = 1.50)  | 139.07<br>2.00 | 69.59<br>(lim = 1.50)  | 77.54<br>9.20  | 8.43<br>lim = (1.50)  |  |  |
| S24 | 70.44<br>0.61  | 116.18<br>(lim = 1.50) | 69.87<br>1.68  | 41.55<br>(lim = 1.50)  | 46.49<br>2.64  | 17.63<br>lim = (1.50) |  |  |
| S25 | 104.89<br>1.77 | 59.38<br>(lim = 1.50)  | 106.45<br>2.24 | 47.58<br>(lim = 1.50)  | 64.93<br>3.16  | 20.57<br>lim = (1.50) |  |  |
| S26 | 243.28<br>2.66 | 91.38<br>(lim = 1.50)  | 232.01<br>5.44 | 42.63<br>(lim = 1.50)  | 113.21<br>7.55 | 14.98<br>lim = (1.50) |  |  |
| S27 | 66.47<br>3.14  | 21.20<br>(lim = 1.50)  | 67.27<br>2.42  | 27.80<br>(lim = 1.50)  | 46.33<br>5.99  | 7.74<br>lim = (1.50)  |  |  |
| S28 | 90.21<br>1.44  | 62.78<br>(lim = 1.50)  | 81.48<br>2.53  | 32.15<br>(lim = 1.50)  | 54.22<br>3.67  | 14.76<br>lim = (1.50) |  |  |
| S29 | 83.29<br>1.51  | 55.14<br>(lim = 1.50)  | 80.70<br>2.49  | 32.46<br>(lim = 1.50)  | 56.25<br>3.77  | 14.92<br>lim = (1.50) |  |  |
| S30 | 141.95<br>4.09 | 34.70<br>(lim = 1.50)  | 143.92<br>2.64 | 54.57<br>(lim = 1.50)  | 79.92<br>8.05  | 9.93<br>lim = (1.50)  |  |  |
| S31 | 108.56<br>6.94 | 15.65<br>(lim = 1.50)  | 108.02<br>2.02 | 53.56<br>(lim = 1.50)  | 66.18<br>12.30 | 5.38<br>lim = (1.50)  |  |  |
| S32 | 76.89<br>5.97  | 12.87<br>(lim = 1.50)  | 77.60<br>3.13  | 24.83<br>(lim = 1.50)  | 51.06<br>12.01 | 4.25<br>lim = (1.50)  |  |  |
| S33 | 121.61<br>5.03 | 24.19<br>(lim = 1.50)  | 123.07<br>1.65 | 74.46<br>(lim = 1.50)  | 71.20<br>9.14  | 7.79<br>lim = (1.50)  |  |  |
| S34 | 60.16<br>0.55  | 110.06<br>(lim = 1.50) | 63.02<br>1.47  | 42.90<br>(lim = 1.50)  | 43.93<br>2.46  | 17.85<br>lim = (1.50) |  |  |
| S35 | 86.27<br>1.70  | 50.86<br>(lim = 1.50)  | 87.63<br>1.89  | 46.27<br>(lim = 1.50)  | 58.30<br>2.97  | 19.60<br>lim = (1.50) |  |  |
| S36 | 94.93<br>1.59  | 59.82<br>(lim = 1.50)  | 91.73<br>1.70  | 54.03<br>(lim = 1.50)  | 61.03<br>4.01  | 15.20<br>lim = (1.50) |  |  |
| S37 | 95.47<br>2.77  | 34.42<br>(lim = 1.50)  | 94.35<br>2.24  | 42.12<br>(lim = 1.50)  | 60.76<br>4.95  | 12.28<br>lim = (1.50) |  |  |

|     |                |                        |                |                       |                |                       |  |  |
|-----|----------------|------------------------|----------------|-----------------------|----------------|-----------------------|--|--|
| S38 | 135.26<br>4.71 | 28.70<br>(lim = 1.50)  | 134.87<br>1.76 | 76.47<br>(lim = 1.50) | 76.11<br>8.36  | 9.11<br>lim = (1.50)  |  |  |
| S39 | 101.04<br>3.48 | 29.05<br>(lim = 1.50)  | 102.69<br>2.20 | 46.69<br>(lim = 1.50) | 64.31<br>6.40  | 10.05<br>lim = (1.50) |  |  |
| S40 | 126.32<br>6.56 | 19.25<br>(lim = 1.50)  | 128.60<br>2.30 | 56.00<br>(lim = 1.50) | 73.96<br>12.03 | 6.15<br>lim = (1.50)  |  |  |
| S41 | 85.90<br>8.07  | 10.65<br>(lim = 1.50)  | 86.88<br>2.17  | 39.96<br>(lim = 1.50) | 54.60<br>16.20 | 3.37<br>lim = (1.50)  |  |  |
| S42 | 65.80<br>3.53  | 18.62<br>(lim = 1.50)  | 62.82<br>4.80  | 13.08<br>(lim = 1.50) | 45.87<br>10.98 | 4.18<br>lim = (1.50)  |  |  |
| S43 | 72.76<br>2.00  | 36.44<br>(lim = 1.50)  | 72.68<br>9.40  | 7.73<br>(lim = 1.50)  | 48.41<br>1.46  | 33.26<br>lim = (1.50) |  |  |
| S44 | 67.09<br>4.44  | 15.09<br>(lim = 1.50)  | 67.25<br>5.06  | 13.30<br>(lim = 1.50) | 46.76<br>11.34 | 4.12<br>lim = (1.50)  |  |  |
| S45 | 78.04<br>4.60  | 16.98<br>(lim = 1.50)  | 78.96<br>3.93  | 20.12<br>(lim = 1.50) | 51.89<br>10.84 | 4.79<br>lim = (1.50)  |  |  |
| S46 | 77.76<br>1.13  | 68.59<br>(lim = 1.50)  | 90.43<br>2.75  | 32.93<br>(lim = 1.50) | 57.55<br>5.39  | 10.68<br>lim = (1.50) |  |  |
| S47 | 52.04<br>1.33  | 39.22<br>(lim = 1.50)  | 52.91<br>2.86  | 18.50<br>(lim = 1.50) | 40.76<br>4.06  | 10.04<br>lim = (1.50) |  |  |
| S48 | 51.79<br>0.50  | 103.55<br>(lim = 1.50) | 58.71<br>1.94  | 30.23<br>(lim = 1.50) | 42.97<br>3.10  | 13.85<br>lim = (1.50) |  |  |
| S49 | 85.17<br>1.26  | 67.76<br>(lim = 1.50)  | 78.70<br>3.02  | 26.08<br>(lim = 1.50) | 54.85<br>3.97  | 13.82<br>lim = (1.50) |  |  |
| S50 | 51.45<br>0.53  | 96.69<br>(lim = 1.50)  | 61.19<br>2.71  | 22.55<br>(lim = 1.50) | 42.65<br>4.47  | 9.54<br>lim = (1.50)  |  |  |
| S51 | 63.54<br>1.77  | 35.92<br>(lim = 1.50)  | 61.91<br>5.37  | 11.53<br>(lim = 1.50) | 45.31<br>8.64  | 5.24<br>lim = (1.50)  |  |  |
| S52 | 45.26<br>0.85  | 53.52<br>(lim = 1.50)  | 38.43<br>1.70  | 22.57<br>(lim = 1.50) | 35.16<br>3.19  | 11.03<br>lim = (1.50) |  |  |
| S53 | 69.15<br>1.83  | 37.69<br>(lim = 1.50)  | 66.58<br>4.28  | 15.55<br>(lim = 1.50) | 48.73<br>6.88  | 7.08<br>lim = (1.50)  |  |  |
| S54 | 66.37<br>0.56  | 117.80<br>(lim = 1.50) | 73.86<br>4.25  | 17.39<br>(lim = 1.50) | 49.14<br>7.81  | 6.29<br>lim = (1.50)  |  |  |
| S55 | 108.49<br>1.68 | 64.74<br>(lim = 1.50)  | 107.95<br>3.25 | 33.23<br>(lim = 1.50) | 65.84<br>4.88  | 13.48<br>lim = (1.50) |  |  |
| S56 | 117.40<br>2.61 | 45.04<br>(lim = 1.50)  | 112.28<br>1.77 | 63.47<br>(lim = 1.50) | 68.70<br>4.32  | 15.91<br>lim = (1.50) |  |  |
| S57 | 63.59<br>0.57  | 112.03<br>(lim = 1.50) | 74.09<br>2.00  | 37.09<br>(lim = 1.50) | 49.30<br>3.30  | 14.92<br>lim = (1.50) |  |  |
| S58 | 59.69<br>0.54  | 110.25<br>(lim = 1.50) | 62.62<br>2.06  | 30.41<br>(lim = 1.50) | 43.65<br>3.38  | 12.92<br>lim = (1.50) |  |  |
| S59 | 81.90<br>0.67  | 122.28<br>(lim = 1.50) | 84.00<br>1.90  | 44.18<br>(lim = 1.50) | 53.46<br>3.04  | 17.59<br>lim = (1.50) |  |  |
| S60 | 80.48<br>0.66  | 122.76<br>(lim = 1.50) | 82.62<br>1.92  | 42.99<br>(lim = 1.50) | 52.58<br>3.09  | 17.04<br>lim = (1.50) |  |  |
| S61 | 50.51<br>2.48  | 20.36<br>(lim = 1.50)  | 51.05<br>3.03  | 16.86<br>(lim = 1.50) | 39.33<br>5.38  | 7.31<br>lim = (1.50)  |  |  |
| S62 | 65.63<br>7.41  | 8.86<br>(lim = 1.50)   | 65.57<br>1.73  | 37.86<br>(lim = 1.50) | 45.73<br>12.87 | 3.55<br>lim = (1.50)  |  |  |
| S63 | 12.80<br>1.72  | 7.46<br>(lim = 1.50)   | 12.81<br>0.60  | 21.48<br>(lim = 1.50) | 14.42<br>2.42  | 5.97<br>lim = (1.50)  |  |  |

|     |                |                        |                |                       |                 |                       |  |  |
|-----|----------------|------------------------|----------------|-----------------------|-----------------|-----------------------|--|--|
| S64 | 64.46<br>5.84  | 11.04<br>(lim = 1.50)  | 61.33<br>1.55  | 39.46<br>(lim = 1.50) | 44.91<br>13.40  | 3.35<br>lim = (1.50)  |  |  |
| S65 | 111.19<br>4.62 | 24.05<br>(lim = 1.50)  | 110.28<br>2.82 | 39.09<br>(lim = 1.50) | 67.26<br>9.73   | 6.91<br>lim = (1.50)  |  |  |
| S66 | 109.99<br>3.38 | 32.55<br>(lim = 1.50)  | 98.26<br>1.60  | 61.34<br>(lim = 1.50) | 64.40<br>6.64   | 9.70<br>lim = (1.50)  |  |  |
| S67 | 47.62<br>1.22  | 39.03<br>(lim = 1.50)  | 46.74<br>2.35  | 19.91<br>(lim = 1.50) | 38.01<br>3.70   | 10.28<br>lim = (1.50) |  |  |
| S68 | 62.87<br>0.58  | 109.01<br>(lim = 1.50) | 66.36<br>1.56  | 42.65<br>(lim = 1.50) | 46.25<br>2.65   | 17.44<br>lim = (1.50) |  |  |
| S69 | 95.92<br>1.44  | 66.71<br>(lim = 1.50)  | 86.63<br>1.72  | 50.50<br>(lim = 1.50) | 57.64<br>2.86   | 20.16<br>lim = (1.50) |  |  |
| S70 | 59.98<br>0.51  | 116.77<br>(lim = 1.50) | 70.64<br>2.19  | 32.22<br>(lim = 1.50) | 47.00<br>4.17   | 11.26<br>lim = (1.50) |  |  |
| S71 | 65.05<br>1.11  | 58.55<br>(lim = 1.50)  | 62.30<br>4.13  | 15.08<br>(lim = 1.50) | 45.60<br>7.85   | 5.81<br>lim = (1.50)  |  |  |
| S72 | 43.57<br>0.84  | 51.73<br>(lim = 1.50)  | 36.91<br>1.57  | 23.49<br>(lim = 1.50) | 33.77<br>3.04   | 11.09<br>lim = (1.50) |  |  |
| S73 | 64.83<br>1.02  | 63.44<br>(lim = 1.50)  | 63.21<br>3.64  | 17.35<br>(lim = 1.50) | 46.26<br>6.46   | 7.16<br>lim = (1.50)  |  |  |
| S74 | 66.30<br>0.56  | 117.82<br>(lim = 1.50) | 71.02<br>4.05  | 17.52<br>(lim = 1.50) | 47.25<br>7.58   | 6.23<br>lim = (1.50)  |  |  |
| S75 | 67.34<br>1.69  | 39.75<br>(lim = 1.50)  | 67.59<br>3.32  | 20.37<br>(lim = 1.50) | 47.12<br>6.26   | 7.53<br>lim = (1.50)  |  |  |
| S76 | 75.49<br>2.40  | 31.40<br>(lim = 1.50)  | 72.52<br>2.31  | 31.39<br>(lim = 1.50) | 50.24<br>5.22   | 9.63<br>lim = (1.50)  |  |  |
| S77 | 69.27<br>0.64  | 109.02<br>(lim = 1.50) | 76.64<br>1.70  | 45.16<br>(lim = 1.50) | 50.99<br>2.99   | 17.03<br>lim = (1.50) |  |  |
| S78 | 71.36<br>0.62  | 115.85<br>(lim = 1.50) | 70.30<br>1.71  | 41.00<br>(lim = 1.50) | 46.78<br>2.97   | 15.75<br>lim = (1.50) |  |  |
| S79 | 98.85<br>0.78  | 127.13<br>(lim = 1.50) | 95.10<br>1.55  | 61.21<br>(lim = 1.50) | 58.00<br>2.63   | 22.07<br>lim = (1.50) |  |  |
| S80 | 97.63<br>0.77  | 127.47<br>(lim = 1.50) | 93.99<br>1.60  | 58.79<br>(lim = 1.50) | 57.32<br>2.71   | 21.18<br>lim = (1.50) |  |  |
| S81 | 69.65<br>2.63  | 26.52<br>(lim = 1.50)  | 65.42<br>1.95  | 33.63<br>(lim = 1.50) | 47.88<br>4.12   | 11.61<br>lim = (1.50) |  |  |
| S82 | 65.63<br>7.41  | 8.86<br>(lim = 1.50)   | 65.57<br>1.73  | 37.86<br>(lim = 1.50) | 45.73<br>12.87  | 3.55<br>lim = (1.50)  |  |  |
| S83 | 12.54<br>1.72  | 7.31<br>(lim = 1.50)   | 11.59<br>0.60  | 19.42<br>(lim = 1.50) | 14.12<br>2.42   | 5.84<br>lim = (1.50)  |  |  |
| S86 | 130.07<br>2.85 | 45.57<br>(lim = 1.50)  | 112.72<br>2.66 | 42.42<br>(lim = 1.50) | 70.52<br>6.88   | 10.25<br>lim = (1.50) |  |  |
| S87 | 209.94<br>2.86 | 73.31<br>(lim = 1.50)  | 211.51<br>5.13 | 41.21<br>(lim = 1.50) | 103.20<br>10.29 | 10.03<br>lim = (1.50) |  |  |
| S88 | 67.33<br>0.74  | 91.03<br>(lim = 1.50)  | 78.57<br>5.04  | 15.60<br>(lim = 1.50) | 50.00<br>9.50   | 5.26<br>lim = (1.50)  |  |  |
| S89 | 197.58<br>3.54 | 55.89<br>(lim = 1.50)  | 190.69<br>5.43 | 35.10<br>(lim = 1.50) | 96.40<br>6.84   | 14.10<br>lim = (1.50) |  |  |
| S90 | 173.31<br>2.49 | 69.68<br>(lim = 1.50)  | 173.00<br>4.03 | 42.93<br>(lim = 1.50) | 90.44<br>7.05   | 12.84<br>lim = (1.50) |  |  |
| S91 | 110.90<br>1.50 | 74.07<br>(lim = 1.50)  | 92.90<br>5.52  | 16.83<br>(lim = 1.50) | 59.12<br>1.97   | 29.95<br>lim = (1.50) |  |  |

|      |                |                        |                |                       |                |                       |  |  |
|------|----------------|------------------------|----------------|-----------------------|----------------|-----------------------|--|--|
| S92  | 128.84<br>1.93 | 66.82<br>(lim = 1.50)  | 129.01<br>5.49 | 23.50<br>(lim = 1.50) | 72.54<br>2.77  | 26.20<br>lim = (1.50) |  |  |
| S93  | 137.62<br>1.80 | 76.35<br>(lim = 1.50)  | 117.86<br>4.90 | 24.07<br>(lim = 1.50) | 69.01<br>8.59  | 8.04<br>lim = (1.50)  |  |  |
| S94  | 136.22<br>1.78 | 76.52<br>(lim = 1.50)  | 110.30<br>4.81 | 22.93<br>(lim = 1.50) | 64.58<br>8.28  | 7.80<br>lim = (1.50)  |  |  |
| S95  | 141.95<br>4.80 | 29.56<br>(lim = 1.50)  | 173.09<br>2.10 | 82.58<br>(lim = 1.50) | 76.96<br>8.99  | 8.56<br>lim = (1.50)  |  |  |
| S96  | 165.41<br>2.59 | 63.78<br>(lim = 1.50)  | 199.40<br>2.34 | 85.07<br>(lim = 1.50) | 86.47<br>4.09  | 21.15<br>lim = (1.50) |  |  |
| S97  | 121.51<br>3.48 | 34.88<br>(lim = 1.50)  | 119.92<br>4.15 | 28.91<br>(lim = 1.50) | 70.21<br>8.40  | 8.36<br>lim = (1.50)  |  |  |
| S98  | 121.96<br>0.86 | 141.63<br>(lim = 1.50) | 137.87<br>1.72 | 80.05<br>(lim = 1.50) | 61.71<br>1.40  | 44.07<br>lim = (1.50) |  |  |
| S99  | 113.57<br>0.85 | 133.72<br>(lim = 1.50) | 129.06<br>1.70 | 75.98<br>(lim = 1.50) | 59.91<br>1.37  | 43.63<br>lim = (1.50) |  |  |
| S100 | 65.80<br>3.53  | 18.62<br>(lim = 1.50)  | 62.82<br>4.80  | 13.08<br>(lim = 1.50) | 45.87<br>10.98 | 4.18<br>lim = (1.50)  |  |  |
| S101 | 72.76<br>2.00  | 36.44<br>(lim = 1.50)  | 72.68<br>9.40  | 7.73<br>(lim = 1.50)  | 48.41<br>1.46  | 33.26<br>lim = (1.50) |  |  |
| S104 | 97.64<br>2.53  | 38.64<br>(lim = 1.50)  | 87.06<br>2.44  | 35.74<br>(lim = 1.50) | 59.55<br>6.40  | 9.30<br>lim = (1.50)  |  |  |
| S105 | 122.72<br>3.40 | 36.14<br>(lim = 1.50)  | 124.17<br>5.94 | 20.91<br>(lim = 1.50) | 72.70<br>11.17 | 6.51<br>lim = (1.50)  |  |  |
| S106 | 58.75<br>0.62  | 94.28<br>(lim = 1.50)  | 68.74<br>4.98  | 13.80<br>(lim = 1.50) | 45.74<br>9.33  | 4.90<br>lim = (1.50)  |  |  |
| S107 | 194.37<br>2.29 | 84.86<br>(lim = 1.50)  | 175.80<br>2.16 | 81.21<br>(lim = 1.50) | 95.31<br>3.43  | 27.82<br>lim = (1.50) |  |  |
| S108 | 223.89<br>2.55 | 87.66<br>(lim = 1.50)  | 216.28<br>2.83 | 76.44<br>(lim = 1.50) | 109.17<br>4.93 | 22.13<br>lim = (1.50) |  |  |
| S109 | 156.41<br>1.96 | 79.77<br>(lim = 1.50)  | 152.48<br>4.51 | 33.84<br>(lim = 1.50) | 88.05<br>8.53  | 10.33<br>lim = (1.50) |  |  |
| S110 | 171.60<br>2.07 | 83.08<br>(lim = 1.50)  | 167.33<br>4.43 | 37.74<br>(lim = 1.50) | 93.03<br>8.44  | 11.02<br>lim = (1.50) |  |  |
| S111 | 143.85<br>2.15 | 67.01<br>(lim = 1.50)  | 142.39<br>3.40 | 41.93<br>(lim = 1.50) | 80.17<br>5.77  | 13.90<br>lim = (1.50) |  |  |
| S112 | 151.41<br>3.49 | 43.38<br>(lim = 1.50)  | 150.21<br>2.89 | 51.93<br>(lim = 1.50) | 81.44<br>7.26  | 11.22<br>lim = (1.50) |  |  |
| S113 | 127.34<br>2.16 | 58.94<br>(lim = 1.50)  | 143.52<br>1.90 | 75.66<br>(lim = 1.50) | 74.56<br>3.52  | 21.20<br>lim = (1.50) |  |  |
| S114 | 125.85<br>2.02 | 62.39<br>(lim = 1.50)  | 141.86<br>1.87 | 75.85<br>(lim = 1.50) | 73.69<br>3.22  | 22.91<br>lim = (1.50) |  |  |
| S115 | 89.43<br>3.98  | 22.45<br>(lim = 1.50)  | 89.61<br>4.34  | 20.62<br>(lim = 1.50) | 56.83<br>10.33 | 5.50<br>lim = (1.50)  |  |  |
| S116 | 86.48<br>1.40  | 61.97<br>(lim = 1.50)  | 87.62<br>1.37  | 64.06<br>(lim = 1.50) | 58.30<br>2.65  | 22.00<br>lim = (1.50) |  |  |
| S117 | 3.82<br>0.38   | 10.15<br>(lim = 1.50)  | 3.88<br>0.77   | 5.02<br>(lim = 1.50)  | 4.73<br>1.26   | 3.74<br>lim = (1.50)  |  |  |
| S118 | 4.72<br>0.34   | 14.01<br>(lim = 1.50)  | 4.97<br>1.42   | 3.51<br>(lim = 1.50)  | 6.07<br>2.60   | 2.33<br>lim = (1.50)  |  |  |
| S119 | 3.82<br>0.38   | 10.15<br>(lim = 1.50)  | 3.88<br>0.77   | 5.02<br>(lim = 1.50)  | 4.73<br>1.26   | 3.74<br>lim = (1.50)  |  |  |

|      |                |                       |                |                       |                |                       |  |  |
|------|----------------|-----------------------|----------------|-----------------------|----------------|-----------------------|--|--|
| S120 | 3.82<br>0.38   | 10.15<br>(lim = 1.50) | 3.88<br>0.77   | 5.02<br>(lim = 1.50)  | 4.73<br>1.26   | 3.74<br>lim = (1.50)  |  |  |
| S121 | 4.72<br>0.34   | 14.01<br>(lim = 1.50) | 4.97<br>1.42   | 3.51<br>(lim = 1.50)  | 6.07<br>2.60   | 2.33<br>lim = (1.50)  |  |  |
| S122 | 3.82<br>0.38   | 10.15<br>(lim = 1.50) | 3.88<br>0.77   | 5.02<br>(lim = 1.50)  | 4.73<br>1.26   | 3.74<br>lim = (1.50)  |  |  |
| S123 | 240.47<br>2.64 | 91.25<br>(lim = 1.50) | 213.12<br>3.09 | 69.05<br>(lim = 1.50) | 107.57<br>4.81 | 22.38<br>lim = (1.50) |  |  |
| S130 | 193.68<br>2.27 | 85.24<br>(lim = 1.50) | 166.86<br>3.54 | 47.13<br>(lim = 1.50) | 90.46<br>5.71  | 15.85<br>lim = (1.50) |  |  |
| S131 | 167.21<br>2.73 | 61.20<br>(lim = 1.50) | 160.17<br>3.78 | 42.35<br>(lim = 1.50) | 86.84<br>7.14  | 12.16<br>lim = (1.50) |  |  |
| S132 | 147.14<br>2.12 | 69.49<br>(lim = 1.50) | 147.84<br>6.38 | 23.16<br>(lim = 1.50) | 80.15<br>9.23  | 8.68<br>lim = (1.50)  |  |  |
| S133 | 161.36<br>1.92 | 83.94<br>(lim = 1.50) | 141.74<br>6.40 | 22.16<br>(lim = 1.50) | 76.84<br>8.99  | 8.54<br>lim = (1.50)  |  |  |
| S134 | 162.83<br>1.96 | 83.00<br>(lim = 1.50) | 137.58<br>6.81 | 20.21<br>(lim = 1.50) | 77.45<br>9.64  | 8.03<br>lim = (1.50)  |  |  |
| S135 | 82.62<br>2.72  | 30.38<br>(lim = 1.50) | 79.09<br>5.69  | 13.91<br>(lim = 1.50) | 52.62<br>10.49 | 5.02<br>lim = (1.50)  |  |  |
| S142 | 3.82<br>0.38   | 10.15<br>(lim = 1.50) | 3.88<br>0.77   | 5.02<br>(lim = 1.50)  | 4.73<br>1.26   | 3.74<br>lim = (1.50)  |  |  |
| S143 | 4.72<br>0.34   | 14.01<br>(lim = 1.50) | 4.97<br>1.42   | 3.51<br>(lim = 1.50)  | 6.07<br>2.60   | 2.33<br>lim = (1.50)  |  |  |
| S144 | 3.82<br>0.38   | 10.15<br>(lim = 1.50) | 3.88<br>0.77   | 5.02<br>(lim = 1.50)  | 4.73<br>1.26   | 3.74<br>lim = (1.50)  |  |  |
| S145 | 3.82<br>0.38   | 10.15<br>(lim = 1.50) | 3.88<br>0.77   | 5.02<br>(lim = 1.50)  | 4.73<br>1.26   | 3.74<br>lim = (1.50)  |  |  |
| S146 | 4.72<br>0.34   | 14.01<br>(lim = 1.50) | 4.97<br>1.42   | 3.51<br>(lim = 1.50)  | 6.07<br>2.60   | 2.33<br>lim = (1.50)  |  |  |
| S147 | 3.82<br>0.38   | 10.15<br>(lim = 1.50) | 3.88<br>0.77   | 5.02<br>(lim = 1.50)  | 4.73<br>1.26   | 3.74<br>lim = (1.50)  |  |  |
| S150 | 101.25<br>1.58 | 63.95<br>(lim = 1.50) | 110.74<br>1.59 | 69.64<br>(lim = 1.50) | 64.42<br>2.56  | 25.14<br>lim = (1.50) |  |  |
| S153 | 35.64<br>2.15  | 16.61<br>(lim = 1.50) | 37.27<br>2.00  | 18.66<br>(lim = 1.50) | 30.69<br>3.81  | 8.04<br>lim = (1.50)  |  |  |
| S154 | 64.09<br>1.66  | 38.67<br>(lim = 1.50) | 63.56<br>1.37  | 46.56<br>(lim = 1.50) | 46.91<br>2.03  | 23.13<br>lim = (1.50) |  |  |
| S155 | 73.25<br>2.18  | 33.62<br>(lim = 1.50) | 71.93<br>1.89  | 38.03<br>(lim = 1.50) | 51.57<br>3.87  | 13.32<br>lim = (1.50) |  |  |
| S156 | 72.79<br>3.15  | 23.14<br>(lim = 1.50) | 75.47<br>2.58  | 29.25<br>(lim = 1.50) | 50.74<br>5.45  | 9.31<br>lim = (1.50)  |  |  |
| S157 | 80.41<br>3.69  | 21.80<br>(lim = 1.50) | 79.25<br>1.80  | 44.00<br>(lim = 1.50) | 53.50<br>6.69  | 7.99<br>lim = (1.50)  |  |  |
| S158 | 56.72<br>4.95  | 11.46<br>(lim = 1.50) | 56.61<br>1.47  | 38.45<br>(lim = 1.50) | 41.51<br>8.94  | 4.64<br>lim = (1.50)  |  |  |
| S159 | 82.56<br>4.81  | 17.16<br>(lim = 1.50) | 84.66<br>1.31  | 64.75<br>(lim = 1.50) | 54.93<br>8.71  | 6.31<br>lim = (1.50)  |  |  |
| S160 | 195.35<br>3.29 | 59.45<br>(lim = 1.50) | 197.56<br>6.45 | 30.63<br>(lim = 1.50) | 99.72<br>11.94 | 8.35<br>lim = (1.50)  |  |  |
| S164 | 109.86<br>1.55 | 70.72<br>(lim = 1.50) | 104.89<br>2.44 | 42.96<br>(lim = 1.50) | 70.71<br>4.20  | 16.84<br>lim = (1.50) |  |  |

|      |                |                        |                |                        |                 |                       |  |  |
|------|----------------|------------------------|----------------|------------------------|-----------------|-----------------------|--|--|
| S165 | 115.17<br>1.87 | 61.62<br>(lim = 1.50)  | 120.42<br>3.21 | 37.50<br>(lim = 1.50)  | 73.80<br>5.69   | 12.96<br>lim = (1.50) |  |  |
| S169 | 113.89<br>2.90 | 39.29<br>(lim = 1.50)  | 108.90<br>6.20 | 17.55<br>(lim = 1.50)  | 66.42<br>11.44  | 5.81<br>lim = (1.50)  |  |  |
| S170 | 122.55<br>2.68 | 45.74<br>(lim = 1.50)  | 117.60<br>4.88 | 24.09<br>(lim = 1.50)  | 68.86<br>9.98   | 6.90<br>lim = (1.50)  |  |  |
| S171 | 165.47<br>2.06 | 80.47<br>(lim = 1.50)  | 165.84<br>3.11 | 53.30<br>(lim = 1.50)  | 86.70<br>7.09   | 12.23<br>lim = (1.50) |  |  |
| S172 | 192.06<br>2.26 | 85.07<br>(lim = 1.50)  | 153.98<br>2.93 | 52.48<br>(lim = 1.50)  | 83.48<br>6.58   | 12.68<br>lim = (1.50) |  |  |
| S173 | 222.41<br>2.53 | 88.07<br>(lim = 1.50)  | 183.17<br>3.06 | 59.78<br>(lim = 1.50)  | 92.45<br>7.04   | 13.14<br>lim = (1.50) |  |  |
| S174 | 103.39<br>2.32 | 44.58<br>(lim = 1.50)  | 97.32<br>4.41  | 22.07<br>(lim = 1.50)  | 61.94<br>8.65   | 7.16<br>lim = (1.50)  |  |  |
| S175 | 81.50<br>3.21  | 25.42<br>(lim = 1.50)  | 73.21<br>4.32  | 16.94<br>(lim = 1.50)  | 51.03<br>6.93   | 7.37<br>lim = (1.50)  |  |  |
| S176 | 93.59<br>1.40  | 66.87<br>(lim = 1.50)  | 87.56<br>2.06  | 42.51<br>(lim = 1.50)  | 58.26<br>3.03   | 19.25<br>lim = (1.50) |  |  |
| S177 | 163.58<br>2.88 | 56.83<br>(lim = 1.50)  | 143.04<br>3.60 | 39.70<br>(lim = 1.50)  | 80.53<br>5.62   | 14.34<br>lim = (1.50) |  |  |
| S178 | 140.46<br>2.84 | 49.38<br>(lim = 1.50)  | 138.72<br>4.28 | 32.44<br>(lim = 1.50)  | 78.10<br>6.44   | 12.13<br>lim = (1.50) |  |  |
| S179 | 189.20<br>3.76 | 50.27<br>(lim = 1.50)  | 171.11<br>3.67 | 46.67<br>(lim = 1.50)  | 89.45<br>5.85   | 15.30<br>lim = (1.50) |  |  |
| S180 | 171.83<br>2.10 | 82.01<br>(lim = 1.50)  | 144.08<br>3.53 | 40.83<br>(lim = 1.50)  | 81.12<br>5.87   | 13.81<br>lim = (1.50) |  |  |
| S181 | 200.19<br>6.50 | 30.79<br>(lim = 1.50)  | 199.90<br>3.67 | 54.40<br>(lim = 1.50)  | 101.05<br>13.46 | 7.51<br>lim = (1.50)  |  |  |
| S182 | 206.60<br>6.30 | 32.81<br>(lim = 1.50)  | 201.78<br>8.01 | 25.18<br>(lim = 1.50)  | 101.85<br>18.02 | 5.65<br>lim = (1.50)  |  |  |
| S183 | 56.90<br>1.21  | 46.93<br>(lim = 1.50)  | 56.65<br>2.29  | 24.68<br>(lim = 1.50)  | 43.84<br>1.61   | 27.29<br>lim = (1.50) |  |  |
| S184 | 121.42<br>1.66 | 73.29<br>(lim = 1.50)  | 117.98<br>2.85 | 41.47<br>(lim = 1.50)  | 71.96<br>4.47   | 16.10<br>lim = (1.50) |  |  |
| S185 | 129.61<br>1.69 | 76.65<br>(lim = 1.50)  | 110.43<br>4.29 | 25.77<br>(lim = 1.50)  | 67.36<br>7.36   | 9.15<br>lim = (1.50)  |  |  |
| S186 | 145.84<br>1.87 | 77.83<br>(lim = 1.50)  | 141.44<br>1.80 | 78.70<br>(lim = 1.50)  | 79.22<br>6.54   | 12.12<br>lim = (1.50) |  |  |
| S187 | 196.11<br>2.32 | 84.70<br>(lim = 1.50)  | 158.40<br>3.08 | 51.43<br>(lim = 1.50)  | 85.87<br>5.40   | 15.91<br>lim = (1.50) |  |  |
| S188 | 193.54<br>2.26 | 85.63<br>(lim = 1.50)  | 161.84<br>2.91 | 55.69<br>(lim = 1.50)  | 84.61<br>5.10   | 16.59<br>lim = (1.50) |  |  |
| S189 | 72.01<br>0.62  | 115.62<br>(lim = 1.50) | 73.66<br>1.22  | 60.55<br>(lim = 1.50)  | 49.01<br>1.48   | 33.17<br>lim = (1.50) |  |  |
| S190 | 127.13<br>2.70 | 47.04<br>(lim = 1.50)  | 120.41<br>7.44 | 16.19<br>(lim = 1.50)  | 70.50<br>13.71  | 5.14<br>lim = (1.50)  |  |  |
| S191 | 97.47<br>1.16  | 83.83<br>(lim = 1.50)  | 84.76<br>0.70  | 121.49<br>(lim = 1.50) | 54.44<br>2.92   | 18.64<br>lim = (1.50) |  |  |
| S192 | 122.58<br>1.62 | 75.49<br>(lim = 1.50)  | 102.96<br>0.81 | 126.83<br>(lim = 1.50) | 59.49<br>5.45   | 10.92<br>lim = (1.50) |  |  |
| S193 | 43.06<br>1.83  | 23.59<br>(lim = 1.50)  | 35.88<br>0.50  | 72.10<br>(lim = 1.50)  | 33.18<br>3.16   | 10.49<br>lim = (1.50) |  |  |

|      |                |                        |                |                        |                 |                       |  |  |
|------|----------------|------------------------|----------------|------------------------|-----------------|-----------------------|--|--|
| S194 | 67.85<br>1.42  | 47.84<br>(lim = 1.50)  | 64.62<br>0.59  | 109.50<br>(lim = 1.50) | 45.14<br>2.60   | 17.34<br>lim = (1.50) |  |  |
| S195 | 5.38<br>0.58   | 9.26<br>(lim = 1.50)   | 5.39<br>0.18   | 29.46<br>(lim = 1.50)  | 6.58<br>0.94    | 6.97<br>lim = (1.50)  |  |  |
| S196 | 158.06<br>1.37 | 115.73<br>(lim = 1.50) | 198.26<br>2.24 | 88.40<br>(lim = 1.50)  | 88.99<br>3.25   | 27.37<br>lim = (1.50) |  |  |
| S197 | 85.83<br>2.61  | 32.93<br>(lim = 1.50)  | 83.86<br>3.06  | 27.41<br>(lim = 1.50)  | 55.80<br>6.72   | 8.30<br>lim = (1.50)  |  |  |
| S198 | 74.95<br>1.51  | 49.72<br>(lim = 1.50)  | 67.47<br>1.56  | 43.14<br>(lim = 1.50)  | 52.25<br>2.06   | 25.33<br>lim = (1.50) |  |  |
| S199 | 190.75<br>2.41 | 79.20<br>(lim = 1.50)  | 184.74<br>3.30 | 55.97<br>(lim = 1.50)  | 96.28<br>6.30   | 15.27<br>lim = (1.50) |  |  |
| S200 | 225.66<br>2.57 | 87.80<br>(lim = 1.50)  | 196.52<br>3.36 | 58.55<br>(lim = 1.50)  | 99.20<br>6.65   | 14.91<br>lim = (1.50) |  |  |
| S201 | 215.83<br>4.32 | 49.94<br>(lim = 1.50)  | 216.46<br>3.28 | 65.95<br>(lim = 1.50)  | 105.31<br>8.79  | 11.99<br>lim = (1.50) |  |  |
| S202 | 157.90<br>5.33 | 29.60<br>(lim = 1.50)  | 152.77<br>4.70 | 32.53<br>(lim = 1.50)  | 82.82<br>12.92  | 6.41<br>lim = (1.50)  |  |  |
| S203 | 118.51<br>1.62 | 72.97<br>(lim = 1.50)  | 104.80<br>1.53 | 68.55<br>(lim = 1.50)  | 66.70<br>2.52   | 26.50<br>lim = (1.50) |  |  |
| S204 | 158.40<br>6.72 | 23.58<br>(lim = 1.50)  | 158.07<br>7.32 | 21.58<br>(lim = 1.50)  | 82.64<br>17.27  | 4.79<br>lim = (1.50)  |  |  |
| S205 | 203.48<br>4.89 | 41.64<br>(lim = 1.50)  | 226.32<br>2.56 | 88.40<br>(lim = 1.50)  | 99.28<br>10.42  | 9.53<br>lim = (1.50)  |  |  |
| S206 | 267.34<br>4.41 | 60.58<br>(lim = 1.50)  | 265.92<br>3.82 | 69.68<br>(lim = 1.50)  | 121.64<br>11.40 | 10.67<br>lim = (1.50) |  |  |
| S207 | 125.54<br>6.43 | 19.54<br>(lim = 1.50)  | 137.41<br>8.76 | 15.69<br>(lim = 1.50)  | 68.06<br>10.71  | 6.36<br>lim = (1.50)  |  |  |
| S208 | 111.23<br>1.78 | 62.34<br>(lim = 1.50)  | 107.29<br>4.92 | 21.79<br>(lim = 1.50)  | 65.44<br>7.46   | 8.77<br>lim = (1.50)  |  |  |
| S209 | 190.62<br>2.24 | 85.21<br>(lim = 1.50)  | 160.92<br>4.57 | 35.23<br>(lim = 1.50)  | 87.24<br>6.99   | 12.48<br>lim = (1.50) |  |  |
| S210 | 86.37<br>1.18  | 73.05<br>(lim = 1.50)  | 111.34<br>1.53 | 72.87<br>(lim = 1.50)  | 60.99<br>3.93   | 15.53<br>lim = (1.50) |  |  |
| S211 | 57.16<br>2.02  | 28.28<br>(lim = 1.50)  | 54.21<br>6.86  | 7.91<br>(lim = 1.50)   | 39.57<br>13.63  | 2.90<br>lim = (1.50)  |  |  |
| S212 | 80.13<br>2.63  | 30.47<br>(lim = 1.50)  | 78.39<br>5.44  | 14.41<br>(lim = 1.50)  | 52.16<br>9.79   | 5.33<br>lim = (1.50)  |  |  |
| S213 | 113.49<br>2.64 | 43.00<br>(lim = 1.50)  | 109.57<br>6.84 | 16.03<br>(lim = 1.50)  | 66.83<br>12.89  | 5.18<br>lim = (1.50)  |  |  |
| S214 | 82.79<br>1.48  | 55.92<br>(lim = 1.50)  | 83.96<br>4.40  | 19.08<br>(lim = 1.50)  | 55.87<br>7.02   | 7.96<br>lim = (1.50)  |  |  |
| S215 | 136.72<br>1.84 | 74.33<br>(lim = 1.50)  | 126.85<br>2.21 | 57.35<br>(lim = 1.50)  | 77.37<br>5.15   | 15.02<br>lim = (1.50) |  |  |
| S216 | 126.24<br>3.62 | 34.90<br>(lim = 1.50)  | 127.21<br>3.75 | 33.90<br>(lim = 1.50)  | 73.91<br>8.03   | 9.20<br>lim = (1.50)  |  |  |
| S217 | 83.30<br>1.24  | 66.95<br>(lim = 1.50)  | 68.00<br>1.63  | 41.74<br>(lim = 1.50)  | 51.97<br>3.44   | 15.11<br>lim = (1.50) |  |  |
| S218 | 153.65<br>1.93 | 79.58<br>(lim = 1.50)  | 144.11<br>4.73 | 30.45<br>(lim = 1.50)  | 81.13<br>8.59   | 9.45<br>lim = (1.50)  |  |  |
| S219 | 84.40<br>1.26  | 66.76<br>(lim = 1.50)  | 69.21<br>0.62  | 111.11<br>(lim = 1.50) | 52.46<br>1.18   | 44.63<br>lim = (1.50) |  |  |

|          |                 |                        |                 |                       |                |                       |  |  |
|----------|-----------------|------------------------|-----------------|-----------------------|----------------|-----------------------|--|--|
| S220     | 39.54<br>0.65   | 61.14<br>(lim = 1.50)  | 47.64<br>1.21   | 39.24<br>(lim = 1.50) | 36.70<br>2.35  | 15.65<br>lim = (1.50) |  |  |
| S221     | 48.98<br>0.47   | 104.87<br>(lim = 1.50) | 53.77<br>0.93   | 57.61<br>(lim = 1.50) | 39.36<br>2.17  | 18.13<br>lim = (1.50) |  |  |
| S222     | 126.25<br>1.74  | 72.68<br>(lim = 1.50)  | 122.75<br>2.59  | 47.46<br>(lim = 1.50) | 72.35<br>4.18  | 17.32<br>lim = (1.50) |  |  |
| S223     | 85.83<br>2.44   | 35.12<br>(lim = 1.50)  | 88.97<br>2.16   | 41.25<br>(lim = 1.50) | 58.18<br>6.12  | 9.51<br>lim = (1.50)  |  |  |
| S224     | 76.34<br>1.87   | 40.84<br>(lim = 1.50)  | 78.88<br>2.04   | 38.64<br>(lim = 1.50) | 54.04<br>3.76  | 14.39<br>lim = (1.50) |  |  |
| S225     | 59.10<br>1.44   | 41.06<br>(lim = 1.50)  | 61.35<br>3.74   | 16.39<br>(lim = 1.50) | 43.25<br>2.19  | 19.71<br>lim = (1.50) |  |  |
| S226     | 52.59<br>1.27   | 41.55<br>(lim = 1.50)  | 52.55<br>2.60   | 20.24<br>(lim = 1.50) | 40.51<br>1.64  | 24.64<br>lim = (1.50) |  |  |
| S227     | 42.12<br>1.15   | 36.63<br>(lim = 1.50)  | 39.86<br>2.52   | 15.83<br>(lim = 1.50) | 34.32<br>2.94  | 11.67<br>lim = (1.50) |  |  |
| S228     | 59.44<br>2.29   | 25.93<br>(lim = 1.50)  | 59.39<br>4.59   | 12.95<br>(lim = 1.50) | 43.34<br>9.67  | 4.48<br>lim = (1.50)  |  |  |
| S229     | 90.47<br>1.97   | 45.87<br>(lim = 1.50)  | 91.61<br>6.99   | 13.11<br>(lim = 1.50) | 58.30<br>12.74 | 4.58<br>lim = (1.50)  |  |  |
| S230     | 84.35<br>1.63   | 51.76<br>(lim = 1.50)  | 85.65<br>3.94   | 21.76<br>(lim = 1.50) | 56.99<br>6.80  | 8.38<br>lim = (1.50)  |  |  |
| S231     | 173.18<br>2.62  | 66.08<br>(lim = 1.50)  | 180.85<br>6.20  | 29.17<br>(lim = 1.50) | 91.04<br>9.59  | 9.49<br>lim = (1.50)  |  |  |
| S232     | 139.17<br>3.69  | 37.75<br>(lim = 1.50)  | 140.91<br>3.51  | 40.11<br>(lim = 1.50) | 78.35<br>8.23  | 9.52<br>lim = (1.50)  |  |  |
| S233     | 116.88<br>2.27  | 51.44<br>(lim = 1.50)  | 121.94<br>7.27  | 16.77<br>(lim = 1.50) | 69.02<br>10.71 | 6.45<br>lim = (1.50)  |  |  |
| S234     | 107.27<br>1.70  | 63.17<br>(lim = 1.50)  | 108.94<br>5.94  | 18.35<br>(lim = 1.50) | 66.45<br>10.07 | 6.60<br>lim = (1.50)  |  |  |
| S235     | 35.70<br>1.08   | 32.92<br>(lim = 1.50)  | 34.42<br>1.92   | 17.96<br>(lim = 1.50) | 31.49<br>3.02  | 10.41<br>lim = (1.50) |  |  |
| S84-85   | 211.47<br>18.44 | 11.47<br>(lim = 1.50)  | 213.04<br>17.98 | 11.85<br>(lim = 1.50) | 96.08<br>15.13 | 6.35<br>lim = (1.50)  |  |  |
| S102-103 | 201.80<br>7.99  | 25.27<br>(lim = 1.50)  | 162.34<br>21.79 | 7.45<br>(lim = 1.50)  | 86.18<br>17.73 | 4.86<br>lim = (1.50)  |  |  |
| SM1      | 58.79<br>18.44  | 3.19<br>(lim = 1.50)   | 92.02<br>2.68   | 34.28<br>(lim = 1.50) | 37.42<br>6.27  | 5.97<br>lim = (1.50)  |  |  |
| SM2      | 58.79<br>18.44  | 3.19<br>(lim = 1.50)   | 92.02<br>2.68   | 34.28<br>(lim = 1.50) | 37.42<br>6.27  | 5.97<br>lim = (1.50)  |  |  |

### Verificação de tensão em área reduzida

| Nome | Interface pilar-fundação  |                          |          |
|------|---------------------------|--------------------------|----------|
|      | Força solicitante<br>(kN) | Força resistente<br>(kN) | Condição |
| S1   | 131.44                    | 2250.00                  | OK       |
| S2   | 169.58                    | 3712.50                  | OK       |
| S3   | 158.12                    | 3712.50                  | OK       |

|     |        |         |    |
|-----|--------|---------|----|
| S4  | 227.16 | 2250.00 | OK |
| S5  | 273.74 | 2250.00 | OK |
| S6  | 170.67 | 2250.00 | OK |
| S7  | 120.13 | 2250.00 | OK |
| S8  | 185.21 | 3712.50 | OK |
| S9  | 214.29 | 2250.00 | OK |
| S10 | 198.38 | 2250.00 | OK |
| S11 | 144.72 | 2250.00 | OK |
| S12 | 147.09 | 3712.50 | OK |
| S13 | 234.69 | 1125.00 | OK |
| S14 | 192.15 | 3712.50 | OK |
| S15 | 271.12 | 1125.00 | OK |
| S16 | 221.12 | 1125.00 | OK |
| S17 | 81.38  | 3187.50 | OK |
| S18 | 242.46 | 1125.00 | OK |
| S19 | 218.80 | 2250.00 | OK |
| S20 | 246.63 | 2250.00 | OK |
| S21 | 187.16 | 2250.00 | OK |
| S22 | 229.78 | 2250.00 | OK |
| S23 | 281.18 | 2250.00 | OK |
| S24 | 169.29 | 3712.50 | OK |
| S25 | 239.88 | 2250.00 | OK |
| S26 | 372.26 | 2250.00 | OK |
| S27 | 170.19 | 2250.00 | OK |
| S28 | 198.62 | 2250.00 | OK |
| S29 | 190.10 | 2250.00 | OK |
| S30 | 269.23 | 2250.00 | OK |
| S31 | 214.27 | 2250.00 | OK |
| S32 | 166.68 | 2250.00 | OK |
| S33 | 245.39 | 2250.00 | OK |
| S34 | 152.56 | 3712.50 | OK |
| S35 | 202.95 | 2250.00 | OK |
| S36 | 206.23 | 2250.00 | OK |
| S37 | 217.03 | 2250.00 | OK |
| S38 | 266.97 | 2250.00 | OK |
| S39 | 213.08 | 2250.00 | OK |
| S40 | 242.78 | 2250.00 | OK |
| S41 | 170.02 | 2250.00 | OK |
| S42 | 138.11 | 4000.00 | OK |
| S43 | 142.17 | 4000.00 | OK |
| S44 | 139.51 | 4000.00 | OK |
| S45 | 161.96 | 2250.00 | OK |
| S46 | 186.04 | 3712.50 | OK |
| S47 | 128.40 | 2250.00 | OK |
| S48 | 139.59 | 3712.50 | OK |
| S49 | 175.32 | 2250.00 | OK |
| S50 | 133.80 | 3712.50 | OK |
| S51 | 140.67 | 2250.00 | OK |
| S52 | 111.01 | 3562.50 | OK |
| S53 | 153.88 | 2250.00 | OK |
| S54 | 157.40 | 3712.50 | OK |

|      |        |         |    |
|------|--------|---------|----|
| S55  | 231.78 | 2250.00 | OK |
| S56  | 249.78 | 2250.00 | OK |
| S57  | 171.49 | 3712.50 | OK |
| S58  | 151.11 | 3712.50 | OK |
| S59  | 187.06 | 3712.50 | OK |
| S60  | 183.11 | 3712.50 | OK |
| S61  | 129.04 | 2250.00 | OK |
| S62  | 135.53 | 4000.00 | OK |
| S63  | 41.31  | 2250.00 | OK |
| S64  | 134.46 | 4000.00 | OK |
| S65  | 222.67 | 2250.00 | OK |
| S66  | 223.26 | 1125.00 | OK |
| S67  | 126.89 | 2250.00 | OK |
| S68  | 161.07 | 3712.50 | OK |
| S69  | 200.82 | 2250.00 | OK |
| S70  | 159.65 | 3712.50 | OK |
| S71  | 151.43 | 2250.00 | OK |
| S72  | 113.57 | 3562.50 | OK |
| S73  | 154.82 | 2250.00 | OK |
| S74  | 157.19 | 3712.50 | OK |
| S75  | 164.57 | 2250.00 | OK |
| S76  | 189.71 | 2250.00 | OK |
| S77  | 189.66 | 3712.50 | OK |
| S78  | 172.05 | 3712.50 | OK |
| S79  | 217.29 | 3712.50 | OK |
| S80  | 214.09 | 3712.50 | OK |
| S81  | 167.55 | 2250.00 | OK |
| S82  | 135.53 | 4000.00 | OK |
| S83  | 41.31  | 2250.00 | OK |
| S86  | 259.01 | 1125.00 | OK |
| S87  | 367.39 | 2250.00 | OK |
| S88  | 166.13 | 3712.50 | OK |
| S89  | 348.44 | 2250.00 | OK |
| S90  | 331.13 | 2250.00 | OK |
| S91  | 209.55 | 2250.00 | OK |
| S92  | 259.14 | 2250.00 | OK |
| S93  | 252.15 | 2250.00 | OK |
| S94  | 249.30 | 2250.00 | OK |
| S95  | 293.02 | 2250.00 | OK |
| S96  | 327.71 | 2250.00 | OK |
| S97  | 249.66 | 2250.00 | OK |
| S98  | 240.90 | 1125.00 | OK |
| S99  | 237.57 | 1125.00 | OK |
| S100 | 138.11 | 4000.00 | OK |
| S101 | 142.17 | 4000.00 | OK |
| S104 | 198.37 | 3712.50 | OK |
| S105 | 235.19 | 2250.00 | OK |
| S106 | 141.22 | 3712.50 | OK |
| S107 | 319.99 | 2250.00 | OK |
| S108 | 371.56 | 2250.00 | OK |
| S109 | 274.46 | 2250.00 | OK |

|      |        |         |    |
|------|--------|---------|----|
| S110 | 289.29 | 2250.00 | OK |
| S111 | 285.91 | 2250.00 | OK |
| S112 | 297.76 | 2250.00 | OK |
| S113 | 264.84 | 2250.00 | OK |
| S114 | 261.05 | 2250.00 | OK |
| S115 | 191.48 | 2250.00 | OK |
| S116 | 196.66 | 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 | 368.70 | 2250.00 | OK |
| S130 | 318.01 | 2250.00 | OK |
| S131 | 322.05 | 2250.00 | OK |
| S132 | 283.94 | 2250.00 | OK |
| S133 | 268.73 | 2250.00 | OK |
| S134 | 274.29 | 2250.00 | OK |
| S135 | 175.32 | 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 | 222.54 | 5831.58 | OK |
| S153 | 96.20  | 2250.00 | OK |
| S154 | 152.64 | 2250.00 | OK |
| S155 | 164.91 | 2250.00 | OK |
| S156 | 160.85 | 2250.00 | OK |
| S157 | 170.29 | 2250.00 | OK |
| S158 | 131.83 | 2250.00 | OK |
| S159 | 179.65 | 2250.00 | OK |
| S160 | 329.68 | 2250.00 | OK |
| S164 | 226.64 | 2250.00 | OK |
| S165 | 235.77 | 2250.00 | OK |
| S169 | 223.88 | 2250.00 | OK |
| S170 | 261.21 | 2250.00 | OK |
| S171 | 329.10 | 2250.00 | OK |
| S172 | 315.90 | 2250.00 | OK |
| S173 | 353.29 | 2250.00 | OK |
| S174 | 221.54 | 2250.00 | OK |
| S175 | 170.34 | 2250.00 | OK |
| S176 | 205.77 | 2250.00 | OK |
| S177 | 289.44 | 2250.00 | OK |
| S178 | 282.63 | 2250.00 | OK |
| S179 | 323.34 | 2250.00 | OK |
| S180 | 292.59 | 2250.00 | OK |
| S181 | 341.45 | 2250.00 | OK |
| S182 | 334.00 | 2250.00 | OK |

|      |        |         |    |
|------|--------|---------|----|
| S183 | 139.78 | 2250.00 | OK |
| S184 | 231.62 | 2250.00 | OK |
| S185 | 236.52 | 2250.00 | OK |
| S186 | 296.81 | 2250.00 | OK |
| S187 | 323.98 | 2250.00 | OK |
| S188 | 316.24 | 2250.00 | OK |
| S189 | 174.05 | 3712.50 | OK |
| S190 | 239.22 | 2250.00 | OK |
| S191 | 195.07 | 3093.75 | OK |
| S192 | 227.04 | 1125.00 | OK |
| S193 | 115.45 | 3562.50 | OK |
| S194 | 164.81 | 3712.50 | OK |
| S195 | 12.72  | 2250.00 | OK |
| S196 | 313.84 | 1125.00 | OK |
| S197 | 189.57 | 2250.00 | OK |
| S198 | 169.15 | 2250.00 | OK |
| S199 | 348.80 | 2250.00 | OK |
| S200 | 359.71 | 2250.00 | OK |
| S201 | 383.30 | 2250.00 | OK |
| S202 | 295.57 | 2250.00 | OK |
| S203 | 227.32 | 2250.00 | OK |
| S204 | 279.70 | 2250.00 | OK |
| S205 | 358.00 | 2250.00 | OK |
| S206 | 432.80 | 2250.00 | OK |
| S207 | 229.22 | 2250.00 | OK |
| S208 | 230.19 | 2250.00 | OK |
| S209 | 312.77 | 2250.00 | OK |
| S210 | 213.58 | 3712.50 | OK |
| S211 | 124.06 | 2250.00 | OK |
| S212 | 164.84 | 2250.00 | OK |
| S213 | 217.81 | 2250.00 | OK |
| S214 | 182.37 | 2250.00 | OK |
| S215 | 258.53 | 1500.00 | OK |
| S216 | 243.75 | 2250.00 | OK |
| S217 | 174.11 | 3712.50 | OK |
| S218 | 270.03 | 2250.00 | OK |
| S219 | 176.36 | 3712.50 | OK |
| S220 | 115.98 | 3562.50 | OK |
| S221 | 130.59 | 3712.50 | OK |
| S222 | 242.58 | 2250.00 | OK |
| S223 | 184.67 | 2250.00 | OK |
| S224 | 171.02 | 2250.00 | OK |
| S225 | 137.97 | 2250.00 | OK |
| S226 | 130.82 | 2250.00 | OK |
| S227 | 107.03 | 6750.00 | OK |
| S228 | 133.75 | 2250.00 | OK |
| S229 | 183.60 | 2250.00 | OK |
| S230 | 183.97 | 2250.00 | OK |
| S231 | 296.03 | 2250.00 | OK |
| S232 | 256.98 | 2250.00 | OK |
| S233 | 220.61 | 2250.00 | OK |

|          |        |          |    |
|----------|--------|----------|----|
| S234     | 211.94 | 2250.00  | OK |
| S235     | 95.99  | 2250.00  | OK |
| S84-85   | 153.77 | 7425.00  | OK |
| S102-103 | 139.51 | 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)<br>As (cm <sup>2</sup> /m) | Md (kN.m/m)<br>As (cm <sup>2</sup> /m) | Md (kN.m/m)<br>A's (cm <sup>2</sup> /m) | Md (kN.m/m)<br>A's (cm <sup>2</sup> /m) |
| S1   | 52.87<br>6.08                          | 52.87<br>6.08                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S2   | 35.77<br>5.76                          | 35.77<br>5.76                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S3   | 35.77<br>5.76                          | 35.77<br>5.76                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S4   | 49.68<br>5.71                          | 49.68<br>5.71                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S5   | 49.41<br>5.68                          | 49.17<br>5.65                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S6   | 50.60<br>5.82                          | 50.60<br>5.82                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S7   | 53.21<br>6.12                          | 52.87<br>6.08                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S8   | 35.77<br>5.76                          | 35.77<br>5.76                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S9   | 49.96<br>5.75                          | 49.96<br>5.75                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S10  | 49.96<br>5.75                          | 49.68<br>5.71                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S11  | 50.95<br>5.86                          | 50.60<br>5.82                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S12  | 35.77<br>5.76                          | 35.77<br>5.76                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S13  | 38.58<br>5.18                          | 36.60<br>4.91                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S14  | 35.77<br>5.76                          | 35.77<br>5.76                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S15  | 38.25<br>5.13                          | 36.36<br>4.88                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S16  | 38.58<br>5.18                          | 36.60<br>4.91                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S17  | 35.77<br>5.76                          | 35.77<br>5.76                          | 0.00<br>0.00                            | 0.00<br>0.00                            |
| S18  | 38.41<br>5.15                          | 36.48<br>4.89                          | 0.00<br>0.00                            | 0.00<br>0.00                            |

|     |               |               |              |              |
|-----|---------------|---------------|--------------|--------------|
| S19 | 49.96<br>5.75 | 49.68<br>5.71 | 0.00<br>0.00 | 0.00<br>0.00 |
| S20 | 49.68<br>5.71 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S21 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S22 | 49.41<br>5.68 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S23 | 49.17<br>5.65 | 48.94<br>5.63 | 0.00<br>0.00 | 0.00<br>0.00 |
| S24 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S25 | 49.68<br>5.71 | 49.68<br>5.71 | 0.00<br>0.00 | 0.00<br>0.00 |
| S26 | 48.33<br>5.56 | 48.33<br>5.56 | 0.00<br>0.00 | 0.00<br>0.00 |
| S27 | 50.60<br>5.82 | 50.60<br>5.82 | 0.00<br>0.00 | 0.00<br>0.00 |
| S28 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S29 | 50.60<br>5.82 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S30 | 49.17<br>5.65 | 49.17<br>5.65 | 0.00<br>0.00 | 0.00<br>0.00 |
| S31 | 49.68<br>5.71 | 49.68<br>5.71 | 0.00<br>0.00 | 0.00<br>0.00 |
| S32 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S33 | 49.41<br>5.68 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S34 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S35 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S36 | 50.27<br>5.78 | 49.96<br>5.75 | 0.00<br>0.00 | 0.00<br>0.00 |
| S37 | 49.96<br>5.75 | 49.96<br>5.75 | 0.00<br>0.00 | 0.00<br>0.00 |
| S38 | 49.17<br>5.65 | 49.17<br>5.65 | 0.00<br>0.00 | 0.00<br>0.00 |
| S39 | 49.96<br>5.75 | 49.96<br>5.75 | 0.00<br>0.00 | 0.00<br>0.00 |
| S40 | 49.41<br>5.68 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S41 | 49.96<br>5.75 | 49.96<br>5.75 | 0.00<br>0.00 | 0.00<br>0.00 |
| S42 | 86.82<br>7.77 | 86.35<br>7.72 | 0.00<br>0.00 | 0.00<br>0.00 |
| S43 | 83.57<br>7.47 | 83.57<br>7.47 | 0.00<br>0.00 | 0.00<br>0.00 |
| S44 | 86.35<br>7.72 | 86.35<br>7.72 | 0.00<br>0.00 | 0.00<br>0.00 |

|     |               |               |              |              |
|-----|---------------|---------------|--------------|--------------|
| S45 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S46 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S47 | 52.87<br>6.08 | 52.87<br>6.08 | 0.00<br>0.00 | 0.00<br>0.00 |
| S48 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S49 | 50.60<br>5.82 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S50 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S51 | 50.95<br>5.86 | 50.60<br>5.82 | 0.00<br>0.00 | 0.00<br>0.00 |
| S52 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S53 | 50.95<br>5.86 | 50.60<br>5.82 | 0.00<br>0.00 | 0.00<br>0.00 |
| S54 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S55 | 49.68<br>5.71 | 49.68<br>5.71 | 0.00<br>0.00 | 0.00<br>0.00 |
| S56 | 49.68<br>5.71 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S57 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S58 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S59 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S60 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S61 | 52.87<br>6.08 | 52.87<br>6.08 | 0.00<br>0.00 | 0.00<br>0.00 |
| S62 | 86.35<br>7.72 | 86.35<br>7.72 | 0.00<br>0.00 | 0.00<br>0.00 |
| S63 | 57.30<br>8.78 | 57.29<br>8.79 | 0.00<br>0.00 | 0.00<br>0.00 |
| S64 | 86.82<br>7.77 | 86.35<br>7.72 | 0.00<br>0.00 | 0.00<br>0.00 |
| S65 | 49.68<br>5.71 | 49.68<br>5.71 | 0.00<br>0.00 | 0.00<br>0.00 |
| S66 | 36.60<br>4.91 | 38.58<br>5.18 | 0.00<br>0.00 | 0.00<br>0.00 |
| S67 | 53.21<br>6.12 | 52.87<br>6.08 | 0.00<br>0.00 | 0.00<br>0.00 |
| S68 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S69 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S70 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |

|     |               |                |              |              |
|-----|---------------|----------------|--------------|--------------|
| S71 | 50.95<br>5.86 | 50.60<br>5.82  | 0.00<br>0.00 | 0.00<br>0.00 |
| S72 | 35.77<br>5.76 | 35.77<br>5.76  | 0.00<br>0.00 | 0.00<br>0.00 |
| S73 | 50.95<br>5.86 | 50.60<br>5.82  | 0.00<br>0.00 | 0.00<br>0.00 |
| S74 | 35.77<br>5.76 | 35.77<br>5.76  | 0.00<br>0.00 | 0.00<br>0.00 |
| S75 | 50.60<br>5.82 | 50.60<br>5.82  | 0.00<br>0.00 | 0.00<br>0.00 |
| S76 | 50.60<br>5.82 | 50.27<br>5.78  | 0.00<br>0.00 | 0.00<br>0.00 |
| S77 | 35.77<br>5.76 | 35.77<br>5.76  | 0.00<br>0.00 | 0.00<br>0.00 |
| S78 | 35.77<br>5.76 | 35.77<br>5.76  | 0.00<br>0.00 | 0.00<br>0.00 |
| S79 | 35.77<br>5.76 | 35.77<br>5.76  | 0.00<br>0.00 | 0.00<br>0.00 |
| S80 | 35.77<br>5.76 | 35.77<br>5.76  | 0.00<br>0.00 | 0.00<br>0.00 |
| S81 | 50.95<br>5.86 | 50.60<br>5.82  | 0.00<br>0.00 | 0.00<br>0.00 |
| S82 | 86.35<br>7.72 | 86.35<br>7.72  | 0.00<br>0.00 | 0.00<br>0.00 |
| S83 | 60.18<br>9.23 | 59.90<br>10.71 | 0.00<br>0.00 | 0.00<br>0.00 |
| S86 | 36.48<br>4.89 | 38.25<br>5.13  | 0.00<br>0.00 | 0.00<br>0.00 |
| S87 | 48.33<br>5.56 | 48.33<br>5.56  | 0.00<br>0.00 | 0.00<br>0.00 |
| S88 | 35.77<br>5.76 | 35.77<br>5.76  | 0.00<br>0.00 | 0.00<br>0.00 |
| S89 | 48.52<br>5.58 | 48.33<br>5.56  | 0.00<br>0.00 | 0.00<br>0.00 |
| S90 | 48.72<br>5.60 | 48.72<br>5.60  | 0.00<br>0.00 | 0.00<br>0.00 |
| S91 | 49.96<br>5.75 | 49.68<br>5.71  | 0.00<br>0.00 | 0.00<br>0.00 |
| S92 | 49.17<br>5.65 | 49.17<br>5.65  | 0.00<br>0.00 | 0.00<br>0.00 |
| S93 | 49.41<br>5.68 | 49.41<br>5.68  | 0.00<br>0.00 | 0.00<br>0.00 |
| S94 | 49.41<br>5.68 | 49.41<br>5.68  | 0.00<br>0.00 | 0.00<br>0.00 |
| S95 | 48.94<br>5.63 | 48.94<br>5.63  | 0.00<br>0.00 | 0.00<br>0.00 |
| S96 | 48.72<br>5.60 | 48.72<br>5.60  | 0.00<br>0.00 | 0.00<br>0.00 |
| S97 | 49.41<br>5.68 | 49.41<br>5.68  | 0.00<br>0.00 | 0.00<br>0.00 |
| S98 | 76.82<br>6.87 | 72.36<br>6.47  | 0.00<br>0.00 | 0.00<br>0.00 |

|      |               |               |              |              |
|------|---------------|---------------|--------------|--------------|
| S99  | 77.21<br>6.91 | 72.64<br>6.50 | 0.00<br>0.00 | 0.00<br>0.00 |
| S100 | 86.82<br>7.77 | 86.35<br>7.72 | 0.00<br>0.00 | 0.00<br>0.00 |
| S101 | 83.57<br>7.47 | 83.57<br>7.47 | 0.00<br>0.00 | 0.00<br>0.00 |
| S104 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S105 | 49.41<br>5.68 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S106 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S107 | 48.94<br>5.63 | 48.72<br>5.60 | 0.00<br>0.00 | 0.00<br>0.00 |
| S108 | 48.52<br>5.58 | 48.33<br>5.56 | 0.00<br>0.00 | 0.00<br>0.00 |
| S109 | 76.82<br>6.87 | 76.82<br>6.87 | 0.00<br>0.00 | 0.00<br>0.00 |
| S110 | 74.79<br>6.69 | 74.79<br>6.69 | 0.00<br>0.00 | 0.00<br>0.00 |
| S111 | 49.17<br>5.65 | 49.17<br>5.65 | 0.00<br>0.00 | 0.00<br>0.00 |
| S112 | 48.94<br>5.63 | 48.94<br>5.63 | 0.00<br>0.00 | 0.00<br>0.00 |
| S113 | 49.41<br>5.68 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S114 | 49.41<br>5.68 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S115 | 49.96<br>5.75 | 49.96<br>5.75 | 0.00<br>0.00 | 0.00<br>0.00 |
| S116 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S117 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>0.00 | 0.00<br>0.00 |
| S118 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>4.50 | 0.26<br>4.50 |
| S119 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>0.00 | 0.00<br>0.00 |
| S120 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>0.00 | 0.00<br>0.00 |
| S121 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>4.50 | 0.26<br>4.50 |
| S122 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>0.00 | 0.00<br>0.00 |
| S123 | 74.05<br>6.62 | 73.71<br>6.59 | 0.00<br>0.00 | 0.00<br>0.00 |
| S130 | 74.79<br>6.69 | 74.41<br>6.66 | 0.00<br>0.00 | 0.00<br>0.00 |
| S131 | 48.94<br>5.63 | 48.72<br>5.60 | 0.00<br>0.00 | 0.00<br>0.00 |
| S132 | 48.94<br>5.63 | 48.94<br>5.63 | 0.00<br>0.00 | 0.00<br>0.00 |

|      |               |               |              |              |
|------|---------------|---------------|--------------|--------------|
| S133 | 48.94<br>5.63 | 48.94<br>5.63 | 0.00<br>0.00 | 0.00<br>0.00 |
| S134 | 49.17<br>5.65 | 48.94<br>5.63 | 0.00<br>0.00 | 0.00<br>0.00 |
| S135 | 50.27<br>5.78 | 49.96<br>5.75 | 0.00<br>0.00 | 0.00<br>0.00 |
| S142 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>0.00 | 0.00<br>0.00 |
| S143 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>4.50 | 0.26<br>4.50 |
| S144 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>0.00 | 0.00<br>0.00 |
| S145 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>0.00 | 0.00<br>0.00 |
| S146 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>4.50 | 0.26<br>4.50 |
| S147 | 35.77<br>5.76 | 35.77<br>6.40 | 0.00<br>0.00 | 0.00<br>0.00 |
| S150 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S153 | 53.60<br>6.16 | 53.60<br>6.16 | 0.00<br>0.00 | 0.00<br>0.00 |
| S154 | 52.87<br>6.08 | 52.55<br>6.04 | 0.00<br>0.00 | 0.00<br>0.00 |
| S155 | 50.95<br>5.86 | 50.60<br>5.82 | 0.00<br>0.00 | 0.00<br>0.00 |
| S156 | 50.60<br>5.82 | 50.60<br>5.82 | 0.00<br>0.00 | 0.00<br>0.00 |
| S157 | 50.60<br>5.82 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S158 | 52.87<br>6.08 | 52.55<br>6.04 | 0.00<br>0.00 | 0.00<br>0.00 |
| S159 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S160 | 48.52<br>5.58 | 48.52<br>5.58 | 0.00<br>0.00 | 0.00<br>0.00 |
| S164 | 78.06<br>6.98 | 77.62<br>6.94 | 0.00<br>0.00 | 0.00<br>0.00 |
| S165 | 77.62<br>6.94 | 77.62<br>6.94 | 0.00<br>0.00 | 0.00<br>0.00 |
| S169 | 49.68<br>5.71 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S170 | 49.41<br>5.68 | 49.17<br>5.65 | 0.00<br>0.00 | 0.00<br>0.00 |
| S171 | 48.72<br>5.60 | 48.72<br>5.60 | 0.00<br>0.00 | 0.00<br>0.00 |
| S172 | 48.94<br>5.63 | 48.72<br>5.60 | 0.00<br>0.00 | 0.00<br>0.00 |
| S173 | 48.52<br>5.58 | 48.52<br>5.58 | 0.00<br>0.00 | 0.00<br>0.00 |
| S174 | 49.96<br>5.75 | 49.68<br>5.71 | 0.00<br>0.00 | 0.00<br>0.00 |

|      |               |               |              |              |
|------|---------------|---------------|--------------|--------------|
| S175 | 50.60<br>5.82 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S176 | 50.27<br>5.78 | 49.96<br>5.75 | 0.00<br>0.00 | 0.00<br>0.00 |
| S177 | 49.17<br>5.65 | 48.94<br>5.63 | 0.00<br>0.00 | 0.00<br>0.00 |
| S178 | 49.17<br>5.65 | 49.17<br>5.65 | 0.00<br>0.00 | 0.00<br>0.00 |
| S179 | 48.72<br>5.60 | 48.72<br>5.60 | 0.00<br>0.00 | 0.00<br>0.00 |
| S180 | 49.17<br>5.65 | 48.94<br>5.63 | 0.00<br>0.00 | 0.00<br>0.00 |
| S181 | 48.52<br>5.58 | 48.52<br>5.58 | 0.00<br>0.00 | 0.00<br>0.00 |
| S182 | 48.52<br>5.58 | 48.33<br>5.56 | 0.00<br>0.00 | 0.00<br>0.00 |
| S183 | 52.87<br>6.08 | 52.87<br>6.08 | 0.00<br>0.00 | 0.00<br>0.00 |
| S184 | 49.68<br>5.71 | 49.68<br>5.71 | 0.00<br>0.00 | 0.00<br>0.00 |
| S185 | 49.68<br>5.71 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S186 | 49.17<br>5.65 | 48.94<br>5.63 | 0.00<br>0.00 | 0.00<br>0.00 |
| S187 | 48.94<br>5.63 | 48.72<br>5.60 | 0.00<br>0.00 | 0.00<br>0.00 |
| S188 | 48.72<br>5.60 | 48.72<br>5.60 | 0.00<br>0.00 | 0.00<br>0.00 |
| S189 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S190 | 49.41<br>5.68 | 49.17<br>5.65 | 0.00<br>0.00 | 0.00<br>0.00 |
| S191 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S192 | 36.73<br>4.93 | 38.58<br>5.18 | 0.00<br>0.00 | 0.00<br>0.00 |
| S193 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S194 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S195 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S196 | 48.52<br>5.58 | 45.85<br>5.27 | 0.00<br>0.00 | 0.00<br>0.00 |
| S197 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S198 | 50.95<br>5.86 | 50.60<br>5.82 | 0.00<br>0.00 | 0.00<br>0.00 |
| S199 | 48.72<br>5.60 | 48.52<br>5.58 | 0.00<br>0.00 | 0.00<br>0.00 |
| S200 | 48.52<br>5.58 | 48.52<br>5.58 | 0.00<br>0.00 | 0.00<br>0.00 |

|      |               |               |              |              |
|------|---------------|---------------|--------------|--------------|
| S201 | 48.33<br>5.56 | 48.33<br>5.56 | 0.00<br>0.00 | 0.00<br>0.00 |
| S202 | 48.94<br>5.63 | 48.72<br>5.60 | 0.00<br>0.00 | 0.00<br>0.00 |
| S203 | 49.96<br>5.75 | 49.68<br>5.71 | 0.00<br>0.00 | 0.00<br>0.00 |
| S204 | 48.72<br>5.60 | 48.72<br>5.60 | 0.00<br>0.00 | 0.00<br>0.00 |
| S205 | 48.52<br>5.58 | 48.33<br>5.56 | 0.00<br>0.00 | 0.00<br>0.00 |
| S206 | 59.82<br>6.02 | 59.82<br>6.02 | 0.00<br>0.00 | 0.00<br>0.00 |
| S207 | 48.94<br>5.63 | 48.94<br>5.63 | 0.00<br>0.00 | 0.00<br>0.00 |
| S208 | 49.68<br>5.71 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S209 | 48.94<br>5.63 | 48.72<br>5.60 | 0.00<br>0.00 | 0.00<br>0.00 |
| S210 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S211 | 50.95<br>5.86 | 50.60<br>5.82 | 0.00<br>0.00 | 0.00<br>0.00 |
| S212 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S213 | 49.68<br>5.71 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S214 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S215 | 37.20<br>4.99 | 38.41<br>5.15 | 0.00<br>0.00 | 0.00<br>0.00 |
| S216 | 49.41<br>5.68 | 49.41<br>5.68 | 0.00<br>0.00 | 0.00<br>0.00 |
| S217 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S218 | 49.17<br>5.65 | 49.17<br>5.65 | 0.00<br>0.00 | 0.00<br>0.00 |
| S219 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S220 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S221 | 35.77<br>5.76 | 35.77<br>5.76 | 0.00<br>0.00 | 0.00<br>0.00 |
| S222 | 49.68<br>5.71 | 49.68<br>5.71 | 0.00<br>0.00 | 0.00<br>0.00 |
| S223 | 50.27<br>5.78 | 50.27<br>5.78 | 0.00<br>0.00 | 0.00<br>0.00 |
| S224 | 50.60<br>5.82 | 50.60<br>5.82 | 0.00<br>0.00 | 0.00<br>0.00 |
| S225 | 50.95<br>5.86 | 50.95<br>5.86 | 0.00<br>0.00 | 0.00<br>0.00 |
| S226 | 52.87<br>6.08 | 52.87<br>6.08 | 0.00<br>0.00 | 0.00<br>0.00 |

|          |                 |                 |              |              |
|----------|-----------------|-----------------|--------------|--------------|
| S227     | 35.77<br>5.76   | 35.77<br>5.76   | 0.00<br>0.00 | 0.00<br>0.00 |
| S228     | 50.95<br>5.86   | 50.95<br>5.86   | 0.00<br>0.00 | 0.00<br>0.00 |
| S229     | 49.96<br>5.75   | 49.96<br>5.75   | 0.00<br>0.00 | 0.00<br>0.00 |
| S230     | 50.27<br>5.78   | 50.27<br>5.78   | 0.00<br>0.00 | 0.00<br>0.00 |
| S231     | 48.72<br>5.60   | 48.72<br>5.60   | 0.00<br>0.00 | 0.00<br>0.00 |
| S232     | 49.17<br>5.65   | 49.17<br>5.65   | 0.00<br>0.00 | 0.00<br>0.00 |
| S233     | 49.41<br>5.68   | 49.41<br>5.68   | 0.00<br>0.00 | 0.00<br>0.00 |
| S234     | 49.68<br>5.71   | 49.68<br>5.71   | 0.00<br>0.00 | 0.00<br>0.00 |
| S235     | 54.02<br>6.21   | 53.60<br>6.16   | 0.00<br>0.00 | 0.00<br>0.00 |
| S84-85   | 120.22<br>9.68  | 120.22<br>9.68  | 0.00<br>8.25 | 0.00<br>8.25 |
| S102-103 | 143.07<br>10.47 | 143.07<br>10.47 | 0.00<br>9.00 | 0.00<br>9.00 |
| SM1      | 35.77<br>5.76   | 35.77<br>5.76   | 1.21<br>4.50 | 0.00<br>4.50 |
| SM2      | 35.77<br>5.76   | 35.77<br>5.76   | 1.21<br>4.50 | 0.00<br>4.50 |

## 6. RESULTADOS DOS PILARES DO EDIFÍCIO PRINCIPAL:

| Dados      |                     |                   |                              | Resultados            |                             |                             |                                                |                                 |                |
|------------|---------------------|-------------------|------------------------------|-----------------------|-----------------------------|-----------------------------|------------------------------------------------|---------------------------------|----------------|
| Pilar      | Seção (cm)          | Nível Altura (cm) | leb vñc<br>leh vñc (cm)      | Nd máx<br>Nd mín (kN) | MBd topo<br>MBd base (kN.m) | MHd topo<br>MHd base (kN.m) | As b<br>Armaduras<br>As h<br>% armad total     | Estribo<br>Topo<br>Base<br>cota | Esb b<br>Esb h |
| P1<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00   | 150.00<br>RR<br>150.00<br>RR | 131.44<br>79.06       | 3.96<br>2.57                | 4.68<br>3.55                | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                      | 17.30<br>17.30 |
| P2<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00   | 150.00<br>RR<br>150.00<br>RR | 169.58<br>101.77      | 0.26<br>0.22                | 3.85<br>2.80                | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12                      | 34.60<br>17.30 |

|             |                     |                 |                              |                  |               |              |                                                |            |                |
|-------------|---------------------|-----------------|------------------------------|------------------|---------------|--------------|------------------------------------------------|------------|----------------|
| P3<br>1:20  | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 158.12<br>94.64  | 0.51<br>0.36  | 3.57<br>2.54 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P4<br>1:20  | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 227.16<br>134.82 | 4.08<br>3.94  | 6.30<br>3.84 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P5<br>1:20  | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 273.74<br>159.13 | 4.81<br>2.85  | 2.30<br>3.49 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P6<br>1:20  | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 170.67<br>101.11 | 1.09<br>1.33  | 4.20<br>3.69 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P7<br>1:20  | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 120.13<br>70.97  | 2.71<br>1.77  | 7.19<br>3.75 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P8<br>1:20  | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 185.21<br>119.71 | 2.26<br>1.27  | 5.78<br>3.62 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P9<br>1:20  | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 214.29<br>137.51 | 7.37<br>3.89  | 4.40<br>3.42 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P10<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 198.38<br>127.55 | 7.93<br>5.36  | 7.26<br>5.64 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P11<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 144.72<br>92.01  | 11.54<br>5.59 | 4.06<br>3.18 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P12<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 147.09<br>89.66  | 0.71<br>0.45  | 2.73<br>1.69 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P13<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 234.69<br>129.84 | 0.33<br>0.27  | 2.85<br>1.52 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P14<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 192.15<br>107.80 | 0.26<br>0.21  | 2.85<br>1.59 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P15<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 271.12<br>143.73 | 0.28<br>0.24  | 2.20<br>1.18 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |

|             |                     |                 |                              |                  |               |              |                                                |            |                |
|-------------|---------------------|-----------------|------------------------------|------------------|---------------|--------------|------------------------------------------------|------------|----------------|
| P16<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 221.12<br>119.23 | 1.18<br>0.70  | 2.55<br>1.54 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P17<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 81.38<br>43.22   | 2.75<br>1.63  | 0.94<br>0.90 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P18<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 242.46<br>150.03 | 2.07<br>1.13  | 5.05<br>2.73 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P19<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 218.80<br>137.08 | 7.15<br>4.38  | 4.03<br>2.78 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P20<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 246.63<br>153.77 | 6.46<br>3.88  | 5.54<br>2.52 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P21<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 187.16<br>121.78 | 1.58<br>1.49  | 8.54<br>5.10 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P22<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 229.78<br>140.93 | 16.02<br>8.55 | 4.00<br>3.38 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P23<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 281.18<br>159.93 | 11.94<br>6.57 | 2.18<br>2.32 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P24<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 169.29<br>94.85  | 0.55<br>0.41  | 3.04<br>2.10 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P25<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 239.88<br>131.46 | 2.76<br>2.67  | 2.16<br>2.16 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P26<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 372.26<br>208.01 | 2.26<br>2.14  | 8.23<br>7.18 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P27<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 170.19<br>92.43  | 7.36<br>4.04  | 2.97<br>2.95 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P28<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 198.62<br>110.75 | 1.24<br>1.68  | 4.05<br>3.11 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |

|             |                     |                 |                              |                  |                |              |                                                |            |                |
|-------------|---------------------|-----------------|------------------------------|------------------|----------------|--------------|------------------------------------------------|------------|----------------|
| P29<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 190.10<br>115.66 | 2.72<br>1.64   | 3.95<br>3.00 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P30<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 269.23<br>169.49 | 4.00<br>3.23   | 9.97<br>5.28 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P31<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 214.27<br>139.59 | 16.27<br>9.38  | 1.97<br>2.25 | 3.68 3 ø 12.5<br>3.68 3 ø 12.5<br>1.1 8 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P32<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 166.68<br>101.33 | 15.34<br>8.03  | 6.44<br>3.90 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P33<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 245.39<br>147.60 | 11.81<br>6.61  | 2.29<br>1.81 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P34<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 152.56<br>90.33  | 0.51<br>0.36   | 2.95<br>1.80 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P35<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 202.95<br>119.23 | 2.86<br>2.16   | 2.10<br>1.98 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P36<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 206.23<br>126.77 | 1.62<br>1.81   | 5.81<br>1.91 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P37<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 217.03<br>126.18 | 6.13<br>3.53   | 2.38<br>2.67 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P38<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 266.97<br>160.31 | 11.07<br>6.25  | 1.52<br>1.89 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P39<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 213.08<br>136.08 | 7.58<br>4.41   | 3.33<br>2.58 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P40<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 242.78<br>156.41 | 15.37<br>8.71  | 4.14<br>2.79 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P41<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 170.02<br>108.77 | 22.65<br>10.96 | 3.89<br>2.64 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |

|             |                     |                 |                               |                  |                |               |                                                |            |                 |
|-------------|---------------------|-----------------|-------------------------------|------------------|----------------|---------------|------------------------------------------------|------------|-----------------|
| P42<br>1:20 | 40.00<br>X<br>40.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 138.11<br>90.75  | 10.49<br>6.19  | 13.33<br>4.51 | 4.02 2 ø 16.0<br>4.02 2 ø 16.0<br>0.5 4 ø 16.0 | ø 5.0 c/19 | 12.97<br>12.97  |
| P43<br>1:20 | 40.00<br>X<br>40.00 | 20.00<br>150.00 | 1472.00<br>EL<br>150.00<br>RR | 142.17<br>95.32  | 11.88<br>12.16 | 0.19<br>2.32  | 4.02 2 ø 16.0<br>4.02 2 ø 16.0<br>0.5 4 ø 16.0 | ø 5.0 c/19 | 127.33<br>12.97 |
| P44<br>1:20 | 40.00<br>X<br>40.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 139.51<br>91.75  | 10.51<br>6.55  | 12.74<br>5.79 | 4.02 2 ø 16.0<br>4.02 2 ø 16.0<br>0.5 4 ø 16.0 | ø 5.0 c/19 | 12.97<br>12.97  |
| P45<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 161.96<br>104.71 | 13.97<br>6.16  | 6.99<br>5.07  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30  |
| P46<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 186.04<br>123.49 | 2.52<br>1.50   | 6.81<br>3.68  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30  |
| P47<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 128.40<br>80.33  | 1.88<br>1.45   | 4.33<br>3.51  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30  |
| P48<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 139.59<br>90.58  | 0.59<br>0.51   | 3.62<br>2.45  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30  |
| P49<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 175.32<br>112.49 | 1.23<br>1.31   | 3.92<br>3.75  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30  |
| P50<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 133.80<br>86.94  | 0.97<br>0.66   | 5.37<br>3.53  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30  |
| P51<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 140.67<br>90.01  | 1.56<br>2.05   | 10.35<br>7.04 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30  |
| P52<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 111.01<br>72.95  | 4.24<br>2.29   | 0.80<br>0.90  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30  |
| P53<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 153.88<br>98.77  | 1.95<br>2.16   | 8.10<br>5.50  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30  |
| P54<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 157.40<br>103.08 | 0.25<br>0.27   | 10.32<br>5.68 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30  |

|             |                     |                 |                              |                  |               |                |                                                |                               |                |
|-------------|---------------------|-----------------|------------------------------|------------------|---------------|----------------|------------------------------------------------|-------------------------------|----------------|
| P55<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 231.78<br>139.18 | 1.70<br>2.04  | 4.95<br>3.98   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>17.30 |
| P56<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 249.78<br>145.20 | 5.49<br>3.28  | 1.13<br>1.90   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>17.30 |
| P57<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 171.49<br>103.09 | 1.13<br>0.70  | 3.87<br>2.53   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12                    | 34.60<br>17.30 |
| P58<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 151.11<br>89.68  | 0.74<br>0.46  | 4.03<br>2.62   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12                    | 34.60<br>17.30 |
| P59<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 187.06<br>111.11 | 0.32<br>0.28  | 3.58<br>2.40   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12                    | 34.60<br>17.30 |
| P60<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 183.11<br>108.87 | 0.29<br>0.26  | 3.65<br>2.43   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12                    | 34.60<br>17.30 |
| P61<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 129.04<br>76.76  | 4.48<br>3.11  | 5.06<br>3.81   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>17.30 |
| P62<br>1:20 | 40.00<br>X<br>40.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 135.53<br>90.37  | 0.88<br>1.85  | 18.20<br>10.06 | 4.02 2 ø 16.0<br>4.02 2 ø 16.0<br>0.5 4 ø 16.0 | ø 5.0 c/19<br>ø 5.0 c/19<br>0 | 12.97<br>12.97 |
| P63<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 300.00 EL<br>150.00<br>RR    | 41.31<br>26.08   | 0.07<br>0.75  | 2.30<br>2.10   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 34.60<br>17.30 |
| P64<br>1:20 | 40.00<br>X<br>40.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 134.46<br>89.60  | 0.87<br>1.60  | 21.52<br>7.86  | 4.02 2 ø 16.0<br>4.02 2 ø 16.0<br>0.5 4 ø 16.0 | ø 5.0 c/19<br>ø 5.0 c/19<br>0 | 12.97<br>12.97 |
| P65<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 222.67<br>143.23 | 12.17<br>6.19 | 6.04<br>3.35   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>17.30 |
| P66<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 223.26<br>138.90 | 3.88<br>2.14  | 7.84<br>4.47   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12                    | 34.60<br>17.30 |
| P67<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 126.89<br>75.01  | 1.94<br>1.38  | 4.18<br>2.81   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>17.30 |

|             |                     |                 |                              |                  |              |               |                                                |            |                |
|-------------|---------------------|-----------------|------------------------------|------------------|--------------|---------------|------------------------------------------------|------------|----------------|
| P68<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 161.07<br>97.18  | 0.37<br>0.32 | 3.27<br>1.92  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P69<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 200.82<br>119.91 | 1.98<br>1.47 | 3.11<br>1.93  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P70<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 159.65<br>96.41  | 1.05<br>0.64 | 5.47<br>2.81  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P71<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 151.43<br>92.09  | 1.24<br>1.21 | 10.60<br>5.30 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P72<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 113.57<br>69.73  | 4.10<br>2.11 | 0.94<br>0.91  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P73<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 154.82<br>92.46  | 0.96<br>1.10 | 8.34<br>4.62  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P74<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 157.19<br>97.75  | 0.28<br>0.22 | 10.12<br>5.41 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P75<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 164.57<br>96.09  | 2.51<br>2.08 | 7.95<br>4.23  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P76<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 189.71<br>104.08 | 5.95<br>3.02 | 4.32<br>2.81  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P77<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 189.66<br>106.33 | 1.21<br>0.80 | 3.60<br>2.12  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P78<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 172.05<br>96.05  | 0.62<br>0.33 | 3.70<br>2.15  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P79<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 217.29<br>120.98 | 0.41<br>0.39 | 3.22<br>1.92  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P80<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 214.09<br>119.41 | 0.49<br>0.43 | 3.32<br>1.98  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |

|             |                     |                 |                              |                  |               |                |                                                |                               |                |
|-------------|---------------------|-----------------|------------------------------|------------------|---------------|----------------|------------------------------------------------|-------------------------------|----------------|
| P81<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 167.55<br>100.57 | 3.93<br>3.33  | 3.00<br>2.12   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>17.30 |
| P82<br>1:20 | 40.00<br>X<br>40.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 135.53<br>90.37  | 0.88<br>1.85  | 18.20<br>10.06 | 4.02 2 ø 16.0<br>4.02 2 ø 16.0<br>0.5 4 ø 16.0 | ø 5.0 c/19<br>ø 5.0 c/19<br>0 | 12.97<br>12.97 |
| P83<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>300.00 EL    | 41.31<br>26.08   | 2.30<br>2.10  | 0.07<br>0.75   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>34.60 |
| P84<br>1:20 | 40.00<br>X<br>40.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 134.46<br>89.60  | 0.87<br>1.60  | 21.52<br>7.86  | 4.02 2 ø 16.0<br>4.02 2 ø 16.0<br>0.5 4 ø 16.0 | ø 5.0 c/19<br>ø 5.0 c/19<br>0 | 12.97<br>12.97 |
| P85<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 153.77<br>96.01  | 1.94<br>2.18  | 9.48<br>6.41   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>17.30 |
| P86<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 259.01<br>150.94 | 6.81<br>3.63  | 6.31<br>3.77   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12                    | 34.60<br>17.30 |
| P87<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 367.39<br>218.09 | 12.22<br>6.70 | 7.38<br>3.67   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>17.30 |
| P88<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 166.13<br>102.84 | 1.55<br>0.96  | 12.69<br>6.78  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12                    | 34.60<br>17.30 |
| P89<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>575.00<br>RR | 348.44<br>203.49 | 9.76<br>4.84  | 5.30<br>7.48   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>66.32 |
| P90<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 331.13<br>192.35 | 4.22<br>3.14  | 8.03<br>5.13   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>17.30 |
| P91<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>575.00<br>RR | 209.55<br>122.70 | 1.38<br>1.14  | 3.38<br>7.47   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>66.32 |
| P92<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>575.00<br>RR | 259.14<br>151.44 | 2.12<br>2.28  | 3.34<br>7.44   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>66.32 |
| P93<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 252.15<br>144.52 | 2.37<br>1.49  | 10.94<br>6.34  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15                    | 17.30<br>17.30 |

|              |                     |                 |                               |                  |               |                |                                                |            |                 |
|--------------|---------------------|-----------------|-------------------------------|------------------|---------------|----------------|------------------------------------------------|------------|-----------------|
| P94<br>1:20  | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 249.30<br>133.04 | 2.09<br>1.84  | 10.76<br>6.31  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30  |
| P95<br>1:20  | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 293.02<br>158.86 | 11.72<br>6.29 | 2.38<br>1.98   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30  |
| P96<br>1:20  | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 327.71<br>181.55 | 4.88<br>3.49  | 1.59<br>1.59   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30  |
| P97<br>1:20  | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 249.66<br>148.55 | 7.32<br>4.53  | 7.71<br>5.23   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30  |
| P98<br>1:20  | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 570.00<br>RR<br>150.00<br>RR  | 240.90<br>127.05 | 0.09<br>0.24  | 1.29<br>1.22   | 4.02 2 ø 16.0<br>8.04 4 ø 16.0<br>3.6 8 ø 16.0 | ø 5.0 c/15 | 131.48<br>17.30 |
| P99<br>1:20  | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 570.00<br>RR<br>150.00<br>RR  | 237.57<br>125.39 | 0.07<br>0.19  | 1.33<br>1.22   | 4.02 2 ø 16.0<br>8.04 4 ø 16.0<br>3.6 8 ø 16.0 | ø 5.0 c/15 | 131.48<br>17.30 |
| P100<br>1:20 | 40.00<br>X<br>40.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 138.11<br>90.75  | 10.49<br>6.19 | 13.33<br>4.51  | 4.02 2 ø 16.0<br>4.02 2 ø 16.0<br>0.5 4 ø 16.0 | ø 5.0 c/19 | 12.97<br>12.97  |
| P101<br>1:20 | 40.00<br>X<br>40.00 | 20.00<br>150.00 | 150.00<br>RR<br>1472.00<br>EL | 142.17<br>95.32  | 0.19<br>2.32  | 11.88<br>12.16 | 4.02 2 ø 16.0<br>4.02 2 ø 16.0<br>0.5 4 ø 16.0 | ø 5.0 c/19 | 12.97<br>127.33 |
| P102<br>1:20 | 40.00<br>X<br>40.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 139.51<br>91.75  | 10.51<br>6.55 | 12.74<br>5.79  | 4.02 2 ø 16.0<br>4.02 2 ø 16.0<br>0.5 4 ø 16.0 | ø 5.0 c/19 | 12.97<br>12.97  |
| P103<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 112.80<br>69.50  | 1.51<br>1.65  | 12.43<br>6.03  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30  |
| P104<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 198.37<br>128.27 | 6.60<br>3.32  | 5.79<br>3.31   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30  |
| P105<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 235.19<br>152.26 | 12.47<br>7.79 | 7.76<br>4.37   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30  |
| P106<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR  | 141.22<br>94.66  | 1.33<br>0.80  | 12.42<br>6.69  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30  |

|              |                       |                 |                              |                  |               |               |                                                |            |                |
|--------------|-----------------------|-----------------|------------------------------|------------------|---------------|---------------|------------------------------------------------|------------|----------------|
| P107<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 319.99<br>203.39 | 1.04<br>1.22  | 4.45<br>2.63  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P108<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 371.56<br>238.79 | 5.06<br>3.16  | 3.62<br>3.23  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P109<br>1:20 | 30.00<br>X<br>30.00   | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 274.46<br>173.30 | 1.71<br>1.47  | 12.71<br>6.02 | 6.03 3 ø 16.0<br>6.03 3 ø 16.0<br>1.8 8 ø 16.0 | ø 5.0 c/19 | 17.30<br>17.30 |
| P110<br>1:20 | 30.00<br>X<br>30.00   | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 289.29<br>182.45 | 12.36<br>5.92 | 2.65<br>2.25  | 6.03 3 ø 16.0<br>6.03 3 ø 16.0<br>1.8 8 ø 16.0 | ø 5.0 c/19 | 17.30<br>17.30 |
| P111<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 285.91<br>172.37 | 4.49<br>2.77  | 5.45<br>4.02  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P112<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 297.76<br>172.33 | 8.27<br>4.54  | 5.10<br>3.43  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P113<br>1:20 | 30.00<br>X<br>30.00   | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 264.84<br>158.26 | 3.85<br>2.57  | 1.88<br>2.10  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P114<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 261.05<br>155.53 | 3.51<br>2.46  | 1.73<br>1.96  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P115<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 191.48<br>115.49 | 9.60<br>5.22  | 10.93<br>5.70 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P116<br>1:20 | Circ<br>0.00<br>30.00 | 20.00<br>150.00 | 150.00<br>RR                 | 196.66<br>122.27 | 2.94<br>1.80  | 1.78<br>1.63  | 4.71 6 ø 10.0<br>0.7                           | ø 5.0 c/12 | 20.00          |
| P117<br>1:20 | 14.00<br>X<br>30.00   | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 9.66<br>4.96     | 0.09<br>0.40  | 0.65<br>0.92  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |
| P118<br>1:20 | 14.00<br>X<br>30.00   | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 14.72<br>8.25    | 0.02<br>0.34  | 1.74<br>1.86  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |
| P119<br>1:20 | 14.00<br>X<br>30.00   | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 9.66<br>4.96     | 0.09<br>0.40  | 0.65<br>0.92  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |

|              |                     |                 |                              |                  |              |               |                                                |            |                |
|--------------|---------------------|-----------------|------------------------------|------------------|--------------|---------------|------------------------------------------------|------------|----------------|
| P120<br>1:20 | 14.00<br>X<br>30.00 | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 9.66<br>4.96     | 0.09<br>0.40 | 0.65<br>0.92  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |
| P121<br>1:20 | 14.00<br>X<br>30.00 | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 14.72<br>8.25    | 0.02<br>0.34 | 1.74<br>1.86  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |
| P122<br>1:20 | 14.00<br>X<br>30.00 | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 9.66<br>4.96     | 0.09<br>0.40 | 0.65<br>0.92  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |
| P123<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 368.70<br>233.47 | 2.94<br>1.51 | 4.97<br>3.58  | 6.03 3 ø 16.0<br>6.03 3 ø 16.0<br>1.8 8 ø 16.0 | ø 5.0 c/19 | 17.30<br>17.30 |
| P130<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 318.01<br>194.35 | 3.38<br>1.57 | 5.99<br>4.21  | 6.03 3 ø 16.0<br>6.03 3 ø 16.0<br>1.8 8 ø 16.0 | ø 5.0 c/19 | 17.30<br>17.30 |
| P131<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 322.05<br>185.30 | 6.31<br>3.52 | 6.31<br>4.68  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P132<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 283.94<br>166.47 | 3.30<br>2.65 | 9.89<br>8.40  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P133<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 268.73<br>156.95 | 9.75<br>8.42 | 1.71<br>1.54  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P134<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 274.29<br>160.47 | 0.90<br>1.20 | 10.61<br>9.00 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P135<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 175.32<br>105.30 | 5.60<br>3.48 | 12.82<br>7.56 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P142<br>1:20 | 14.00<br>X<br>30.00 | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 9.66<br>4.96     | 0.09<br>0.40 | 0.65<br>0.92  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |
| P143<br>1:20 | 14.00<br>X<br>30.00 | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 14.72<br>8.25    | 0.02<br>0.34 | 1.74<br>1.86  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |
| P144<br>1:20 | 14.00<br>X<br>30.00 | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 9.66<br>4.96     | 0.09<br>0.40 | 0.65<br>0.92  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |

|              |                       |                 |                              |                  |               |              |                                                |            |                |
|--------------|-----------------------|-----------------|------------------------------|------------------|---------------|--------------|------------------------------------------------|------------|----------------|
| P145<br>1:20 | 14.00<br>X<br>30.00   | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 9.66<br>4.96     | 0.09<br>0.40  | 0.65<br>0.92 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |
| P146<br>1:20 | 14.00<br>X<br>30.00   | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 14.72<br>8.25    | 0.02<br>0.34  | 1.74<br>1.86 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |
| P147<br>1:20 | 14.00<br>X<br>30.00   | 20.00<br>100.00 | 150.00<br>RR<br>150.00<br>RR | 9.66<br>4.96     | 0.09<br>0.40  | 0.65<br>0.92 | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 37.07<br>17.30 |
| P150<br>1:20 | Circ<br>0.00<br>30.00 | 20.00<br>150.00 | 150.00<br>RR                 | 222.54<br>139.82 | 3.43<br>2.06  | 0.73<br>1.10 | 4.71 6 ø 10.0<br><br>0.7                       | ø 5.0 c/12 | 20.00          |
| P153<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 96.20<br>57.37   | 4.66<br>2.69  | 1.68<br>2.34 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P154<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 152.64<br>96.37  | 1.65<br>1.90  | 1.15<br>1.43 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P155<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 164.91<br>106.39 | 4.61<br>2.68  | 1.95<br>2.15 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P156<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 160.85<br>103.70 | 6.06<br>4.01  | 3.02<br>3.11 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P157<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 170.29<br>110.37 | 8.64<br>4.78  | 1.71<br>2.01 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P158<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 131.83<br>82.54  | 11.55<br>6.50 | 1.22<br>1.57 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P159<br>1:20 | 30.00<br>X<br>30.00   | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 179.65<br>116.12 | 11.30<br>6.30 | 0.82<br>1.35 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P160<br>1:20 | 30.00<br>X<br>30.00   | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 329.68<br>211.34 | 14.59<br>8.73 | 6.81<br>4.17 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P164<br>1:20 | 30.00<br>X<br>30.00   | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 226.64<br>142.89 | 1.95<br>1.74  | 6.10<br>3.31 | 6.03 3 ø 16.0<br>6.03 3 ø 16.0<br>1.8 8 ø 16.0 | ø 5.0 c/19 | 17.30<br>17.30 |

|              |                     |                 |                              |                  |              |               |                                                |            |                |
|--------------|---------------------|-----------------|------------------------------|------------------|--------------|---------------|------------------------------------------------|------------|----------------|
| P165<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 235.77<br>149.83 | 2.76<br>2.23 | 7.94<br>4.18  | 6.03 3 ø 16.0<br>6.03 3 ø 16.0<br>1.8 8 ø 16.0 | ø 5.0 c/19 | 17.30<br>17.30 |
| P169<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 223.88<br>138.24 | 6.30<br>3.82 | 14.18<br>8.36 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P170<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 261.21<br>143.19 | 6.44<br>3.46 | 12.34<br>6.41 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P171<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 329.10<br>181.99 | 3.01<br>2.47 | 10.10<br>3.87 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P172<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 315.90<br>174.90 | 1.32<br>1.19 | 9.78<br>3.62  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P173<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 353.29<br>193.14 | 1.41<br>1.60 | 10.55<br>3.81 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P174<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 221.54<br>130.77 | 4.39<br>2.93 | 10.44<br>5.57 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P175<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 575.00<br>RR<br>150.00<br>RR | 170.34<br>106.92 | 2.79<br>4.07 | 8.16<br>5.52  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 66.32<br>17.30 |
| P176<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 575.00<br>RR<br>150.00<br>RR | 205.77<br>123.76 | 1.87<br>1.58 | 2.98<br>2.40  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 66.32<br>17.30 |
| P177<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 575.00<br>RR<br>150.00<br>RR | 289.44<br>171.65 | 1.58<br>3.57 | 5.98<br>4.45  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 66.32<br>17.30 |
| P178<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 575.00<br>RR<br>150.00<br>RR | 282.63<br>166.73 | 2.62<br>3.69 | 7.16<br>5.39  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 66.32<br>17.30 |
| P179<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 575.00<br>RR<br>150.00<br>RR | 323.34<br>190.60 | 1.32<br>4.80 | 6.13<br>4.52  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 66.32<br>17.30 |
| P180<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 292.59<br>173.25 | 1.52<br>1.14 | 7.01<br>4.34  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |

|              |                     |                 |                              |                  |               |                |                                                |            |                |
|--------------|---------------------|-----------------|------------------------------|------------------|---------------|----------------|------------------------------------------------|------------|----------------|
| P181<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 341.45<br>218.11 | 17.36<br>8.71 | 7.00<br>4.58   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P182<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 334.00<br>215.20 | 16.07<br>8.47 | 18.59<br>10.71 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P183<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>575.00<br>RR | 139.78<br>87.64  | 1.17<br>1.30  | 3.31<br>2.62   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>66.32 |
| P184<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 231.62<br>140.10 | 1.69<br>1.47  | 5.47<br>3.45   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P185<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 236.52<br>141.98 | 1.56<br>1.33  | 9.60<br>5.56   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P186<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 296.81<br>167.65 | 2.79<br>2.24  | 11.79<br>1.91  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P187<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 323.98<br>181.26 | 0.70<br>0.95  | 7.06<br>3.81   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P188<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 316.24<br>176.04 | 6.70<br>3.59  | 1.32<br>1.16   | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P189<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 174.05<br>102.79 | 0.60<br>0.40  | 1.26<br>1.44   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P190<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 239.22<br>147.68 | 6.22<br>3.51  | 16.53<br>9.79  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P191<br>1:20 | 15.00<br>X<br>25.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 195.07<br>116.30 | 0.54<br>0.49  | 4.76<br>1.19   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.8 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>20.76 |
| P192<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 227.04<br>125.80 | 0.50<br>0.25  | 10.66<br>1.22  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P193<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 115.45<br>66.96  | 1.09<br>0.61  | 4.03<br>2.48   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |

|              |                     |                 |                              |                  |               |               |                                                |            |                |
|--------------|---------------------|-----------------|------------------------------|------------------|---------------|---------------|------------------------------------------------|------------|----------------|
| P194<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 164.81<br>93.05  | 0.74<br>0.43  | 3.32<br>1.80  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P195<br>1:20 | 15.00<br>X<br>25.00 | 20.00<br>150.00 | 300.00 EL<br>150.00<br>RR    | 12.72<br>7.62    | 0.13<br>0.21  | 2.40<br>0.76  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.8 4 ø 10.0 | ø 5.0 c/12 | 69.20<br>20.76 |
| P196<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 313.84<br>192.25 | 3.99<br>1.84  | 3.14<br>1.03  | 2.45 2 ø 12.5<br>3.68 3 ø 12.5<br>1.6 6 ø 12.5 | ø 5.0 c/15 | 34.60<br>17.30 |
| P197<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 189.57<br>118.48 | 5.08<br>3.33  | 7.30<br>3.75  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P198<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>575.00<br>RR | 169.15<br>104.93 | 1.71<br>1.71  | 2.82<br>1.64  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>66.32 |
| P199<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 348.80<br>207.23 | 4.09<br>3.00  | 7.67<br>4.25  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P200<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 359.71<br>212.54 | 3.45<br>2.12  | 9.05<br>4.32  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P201<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 383.30<br>226.25 | 8.89<br>5.66  | 7.48<br>4.21  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P202<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 295.57<br>173.05 | 14.85<br>7.21 | 10.62<br>6.19 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P203<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 227.32<br>143.77 | 3.32<br>1.62  | 1.81<br>1.65  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P204<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 279.70<br>169.59 | 15.22<br>9.53 | 18.54<br>9.75 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P205<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>575.00<br>RR | 358.00<br>208.86 | 15.13<br>6.47 | 2.50<br>2.06  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>66.32 |
| P206<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 432.80<br>261.81 | 15.45<br>6.00 | 7.29<br>4.71  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |

|              |                     |                 |                              |                  |               |               |                                                |            |                |
|--------------|---------------------|-----------------|------------------------------|------------------|---------------|---------------|------------------------------------------------|------------|----------------|
| P207<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 570.00<br>RR<br>150.00<br>RR | 229.22<br>135.58 | 5.84<br>12.08 | 13.01<br>8.78 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 65.74<br>17.30 |
| P208<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 230.19<br>134.29 | 1.15<br>2.24  | 8.65<br>6.35  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P209<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 312.77<br>183.42 | 4.06<br>1.35  | 7.53<br>5.86  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P210<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 213.58<br>130.05 | 2.70<br>1.59  | 5.80<br>1.59  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P211<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 124.06<br>75.35  | 0.99<br>2.60  | 19.36<br>9.20 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P212<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 164.84<br>108.35 | 6.21<br>3.41  | 10.49<br>7.06 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P213<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 217.81<br>139.44 | 4.63<br>3.31  | 16.77<br>9.08 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P214<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 182.37<br>116.54 | 2.64<br>1.72  | 8.31<br>5.68  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P215<br>1:20 | 20.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 258.53<br>167.76 | 6.21<br>2.91  | 4.03<br>2.32  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.5 4 ø 10.0 | ø 5.0 c/12 | 25.95<br>17.30 |
| P216<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 243.75<br>158.42 | 6.86<br>4.79  | 8.07<br>4.73  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P217<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 174.11<br>113.13 | 4.48<br>2.17  | 2.13<br>1.34  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P218<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 270.03<br>173.10 | 11.40<br>6.10 | 0.47<br>0.94  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P219<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 176.36<br>112.49 | 1.38<br>0.78  | 0.47<br>1.11  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |

|              |                     |                 |                              |                  |               |               |                                                |            |                |
|--------------|---------------------|-----------------|------------------------------|------------------|---------------|---------------|------------------------------------------------|------------|----------------|
| P220<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 115.98<br>76.74  | 1.85<br>0.85  | 2.38<br>1.32  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P221<br>1:20 | 15.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 130.59<br>82.71  | 2.21<br>0.33  | 2.55<br>1.08  | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.7 4 ø 10.0 | ø 5.0 c/12 | 34.60<br>17.30 |
| P222<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 242.58<br>156.81 | 4.95<br>3.07  | 1.71<br>1.41  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P223<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 184.67<br>122.08 | 8.51<br>2.57  | 4.73<br>3.02  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P224<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 171.02<br>111.78 | 3.58<br>2.37  | 3.62<br>2.27  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P225<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 570.00<br>RR<br>150.00<br>RR | 137.97<br>89.08  | 2.29<br>4.68  | 2.08<br>1.65  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 65.74<br>17.30 |
| P226<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 570.00<br>RR<br>150.00<br>RR | 130.82<br>84.23  | 1.26<br>3.27  | 1.13<br>1.37  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 65.74<br>17.30 |
| P227<br>1:20 | 30.00<br>X<br>35.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 107.03<br>67.47  | 2.58<br>2.99  | 1.09<br>1.23  | 1.57 2 ø 10.0<br>2.36 3 ø 10.0<br>0.4 6 ø 10.0 | ø 5.0 c/12 | 17.30<br>14.83 |
| P228<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 133.75<br>87.08  | 4.65<br>2.95  | 13.31<br>6.07 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P229<br>1:20 | 30.00<br>X<br>30.00 | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 183.60<br>119.60 | 2.98<br>2.36  | 16.62<br>9.25 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/10 | 17.30<br>17.30 |
| P230<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 183.97<br>118.73 | 8.40<br>5.01  | 2.62<br>1.92  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P231<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 296.03<br>192.79 | 10.43<br>8.26 | 5.38<br>3.34  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |
| P232<br>1:20 | 30.00<br>X<br>30.00 | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 256.98<br>166.93 | 6.97<br>4.42  | 8.88<br>4.81  | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5 | ø 5.0 c/15 | 17.30<br>17.30 |

|              |                      |                 |                              |                  |                |              |                                                      |            |                |
|--------------|----------------------|-----------------|------------------------------|------------------|----------------|--------------|------------------------------------------------------|------------|----------------|
| P233<br>1:20 | 30.00<br>X<br>30.00  | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 220.61<br>143.69 | 12.65<br>9.78  | 3.84<br>2.81 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5       | ø 5.0 c/15 | 17.30<br>17.30 |
| P234<br>1:20 | 30.00<br>X<br>30.00  | 20.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 211.94<br>138.39 | 12.34<br>7.84  | 3.63<br>2.00 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5       | ø 5.0 c/15 | 17.30<br>17.30 |
| P235<br>1:20 | 30.00<br>X<br>30.00  | 15.00<br>150.00 | 150.00<br>RR<br>150.00<br>RR | 95.99<br>59.39   | 1.80<br>1.22   | 3.30<br>2.25 | 2.45 2 ø 12.5<br>2.45 2 ø 12.5<br>0.5 4 ø 12.5       | ø 5.0 c/15 | 17.30<br>17.30 |
| PM1<br>1:20  | 60.00<br>X<br>130.00 | 20.00<br>150.00 | 300.00 EL<br>300.00 EL       | 86.73<br>32.70   | 18.17<br>25.75 | 8.90<br>1.99 | 5.50 7 ø 10.0<br>11.78 15 ø<br>10.0<br>0.4 40 ø 10.0 | ø 5.0 c/12 | 17.30<br>7.98  |
| PM2<br>1:20  | 60.00<br>X<br>130.00 | 20.00<br>150.00 | 300.00 EL<br>300.00 EL       | 86.73<br>32.70   | 18.17<br>25.75 | 8.90<br>1.99 | 5.50 7 ø 10.0<br>11.78 15 ø<br>10.0<br>0.4 40 ø 10.0 | ø 5.0 c/12 | 17.30<br>7.98  |

## 7. RESULTADOS DO RADIER DO EDIFÍCIO PRINCIPAL:

| Nome | Espessura (cm) | Carga (kN/m <sup>2</sup> ) | Mdx (kN.m/m) | Mdy (kN.m/m) | Asx                          | Asy                          |
|------|----------------|----------------------------|--------------|--------------|------------------------------|------------------------------|
| LA1  | 18             | 7.36                       | 7.61         | 2.64         | As = 1.96 cm <sup>2</sup> /m | As = 1.96 cm <sup>2</sup> /m |

## 8. RESULTADOS DAS SAPATAS DA EDÍCULA:

### Relatório de Cálculos das Sapatas

#### Esforços e pressões

| Nome | MB<br>MH<br>(kN.m) | FB<br>FH<br>(kN) | Carga<br>Carga total<br>(kN) | Pressão Sig1<br>(kgf/cm <sup>2</sup> ) | Pressão Sig2<br>(kgf/cm <sup>2</sup> ) | Pressão Sig3<br>(kgf/cm <sup>2</sup> ) | Pressão Sig4<br>(kgf/cm <sup>2</sup> ) |
|------|--------------------|------------------|------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|
| S1   | 0.85<br>0.80       | 0.99<br>1.41     | 24.23<br>33.93               | 0.50<br>(lim = 1.60)                   | 0.90<br>(lim = 1.60)                   | 1.24<br>(lim = 1.60)                   | 0.84<br>(lim = 1.60)                   |
| S2   | 0.88<br>0.50       | 1.04<br>0.81     | 24.01<br>33.70               | 0.99<br>(lim = 1.60)                   | 0.57<br>(lim = 1.60)                   | 0.74<br>(lim = 1.60)                   | 1.16<br>(lim = 1.60)                   |
| S3   | 1.13<br>0.64       | 1.14<br>0.99     | 50.34<br>63.31               | 1.00<br>(lim = 1.60)                   | 1.29<br>(lim = 1.60)                   | 1.44<br>(lim = 1.60)                   | 1.15<br>(lim = 1.60)                   |
| S4   | 1.21<br>0.53       | 1.22<br>0.79     | 53.06<br>66.02               | 1.35<br>(lim = 1.60)                   | 1.08<br>(lim = 1.60)                   | 1.18<br>(lim = 1.60)                   | 1.46<br>(lim = 1.60)                   |
| S5   | 0.91<br>1.11       | 1.01<br>2.17     | 28.24<br>37.93               | 1.01<br>(lim = 1.60)                   | 1.44<br>(lim = 1.60)                   | 0.94<br>(lim = 1.60)                   | 0.51<br>(lim = 1.60)                   |
| S6   | 0.84<br>0.60       | 1.03<br>1.14     | 22.85<br>32.54               | 1.16<br>(lim = 1.60)                   | 0.76<br>(lim = 1.60)                   | 0.51<br>(lim = 1.60)                   | 0.91<br>(lim = 1.60)                   |

#### Estabilidade

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

#### Verificação de tensão em área reduzida

| Nome | Interface pilar-fundação |                       |          |
|------|--------------------------|-----------------------|----------|
|      | Força solicitante (kN)   | Força resistente (kN) | Condição |
| S1   | 33.93                    | 2437.50               | OK       |
| S2   | 33.61                    | 2437.50               | OK       |
| S3   | 70.48                    | 3200.00               | OK       |
| S4   | 74.28                    | 3200.00               | OK       |
| S5   | 39.54                    | 2437.50               | OK       |
| S6   | 31.98                    | 2437.50               | OK       |

## Dimensionamento

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

## 9. RESULTADOS DOS PILARES DA EDÍCULA:

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

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

## 10. RESULTADOS DAS SAPATAS DA CASA DE GASES:

### Relatório de Cálculos das Sapatas

#### Esforços e pressões

| Nome | MB<br>MH<br>(kN.m) | FB<br>FH<br>(kN) | Carga<br>Carga total<br>(kN) | Pressão Sig1<br>(kgf/cm²) | Pressão Sig2<br>(kgf/cm²) | Pressão Sig3<br>(kgf/cm²) | Pressão Sig4<br>(kgf/cm²) |
|------|--------------------|------------------|------------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| S1   | 0.29<br>0.22       | 0.31<br>0.27     | 9.79<br>19.53                | 0.58<br>(lim = 1.60)      | 0.45<br>(lim = 1.60)      | 0.42<br>(lim = 1.60)      | 0.55<br>(lim = 1.60)      |
| S2   | 0.29<br>0.22       | 0.31<br>0.27     | 10.66<br>20.40               | 0.47<br>(lim = 1.60)      | 0.60<br>(lim = 1.60)      | 0.58<br>(lim = 1.60)      | 0.44<br>(lim = 1.60)      |
| S3   | 0.29<br>0.22       | 0.31<br>0.27     | 9.79<br>19.53                | 0.55<br>(lim = 1.60)      | 0.42<br>(lim = 1.60)      | 0.45<br>(lim = 1.60)      | 0.58<br>(lim = 1.60)      |
| S4   | 0.29<br>0.22       | 0.31<br>0.27     | 10.66<br>20.40               | 0.44<br>(lim = 1.60)      | 0.58<br>(lim = 1.60)      | 0.60<br>(lim = 1.60)      | 0.47<br>(lim = 1.60)      |

#### Estabilidade

| Nome | Tombamento B         |                       | Tombamento H         |                       | Deslizamento       |                       | Arrancamento |            |
|------|----------------------|-----------------------|----------------------|-----------------------|--------------------|-----------------------|--------------|------------|
|      | Mrd<br>Msd<br>(kN.m) | Mrd / Msd             | Mrd<br>Msd<br>(kN.m) | Mrd / Msd             | Frd<br>Fsd<br>(kN) | Frd / Fsd             | Nt<br>(kN)   | Ns<br>(kN) |
| S1   | 5.19<br>0.29         | 18.08<br>(lim = 1.50) | 5.05<br>0.21         | 24.06<br>(lim = 1.50) | 5.85<br>0.31       | 19.07<br>lim = (1.50) |              |            |
| S2   | 5.48<br>0.28         | 19.73<br>(lim = 1.50) | 5.31<br>0.21         | 25.03<br>(lim = 1.50) | 6.17<br>0.31       | 20.13<br>lim = (1.50) |              |            |
| S3   | 5.19<br>0.29         | 18.08<br>(lim = 1.50) | 5.05<br>0.21         | 24.07<br>(lim = 1.50) | 5.85<br>0.31       | 19.07<br>lim = (1.50) |              |            |
| S4   | 5.48<br>0.28         | 19.73<br>(lim = 1.50) | 5.31<br>0.21         | 25.03<br>(lim = 1.50) | 6.17<br>0.31       | 20.13<br>lim = (1.50) |              |            |

### Verificação de tensão em área reduzida

| Nome | Interface pilar-fundação |                       |          |
|------|--------------------------|-----------------------|----------|
|      | Força solicitante (kN)   | Força resistente (kN) | Condição |
| S1   | 13.70                    | 2275.00               | OK       |
| S2   | 14.93                    | 2275.00               | OK       |
| S3   | 13.70                    | 2275.00               | OK       |
| S4   | 14.93                    | 2275.00               | OK       |

### Dimensionamento

| Nome | Armaduras inferiores      |                           | Armaduras superiores       |                            |
|------|---------------------------|---------------------------|----------------------------|----------------------------|
|      | Dir. B                    | Dir. H                    | Dir. B                     | Dir. H                     |
|      | Md (kN.m/m)<br>As (cm²/m) | Md (kN.m/m)<br>As (cm²/m) | Md (kN.m/m)<br>A's (cm²/m) | Md (kN.m/m)<br>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                       |

## 11. RESULTADOS DOS PILARES DA CASA DE GASES:

| Dados      |                     |                   |                                | Resultados               |                                |                                |                                                |                                 |                |
|------------|---------------------|-------------------|--------------------------------|--------------------------|--------------------------------|--------------------------------|------------------------------------------------|---------------------------------|----------------|
| Pilar      | Seção (cm)          | Nível Altura (cm) | le b vinc<br>le h vinc<br>(cm) | Nd máx<br>Nd mín<br>(kN) | MBd topo<br>MBd base<br>(kN.m) | MHd topo<br>MHd base<br>(kN.m) | As b<br>Armaduras<br>As h<br>% armad<br>total  | Estribo<br>Topo<br>Base<br>cota | Esb b<br>Esb h |
| P1<br>1:20 | 14.00<br>X<br>25.00 | 25.00<br>150.00   | 150.00<br>RR<br>150.00<br>RR   | 13.70<br>4.39            | 0.26<br>0.31                   | 0.26<br>0.40                   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.9 4 ø 10.0 | ø 5.0 c/12                      | 37.07<br>20.76 |
| P2<br>1:20 | 14.00<br>X<br>25.00 | 25.00<br>150.00   | 150.00<br>RR<br>150.00<br>RR   | 14.93<br>5.32            | 0.25<br>0.31                   | 0.26<br>0.40                   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.9 4 ø 10.0 | ø 5.0 c/12                      | 37.07<br>20.76 |
| P3<br>1:20 | 14.00<br>X<br>25.00 | 25.00<br>150.00   | 150.00<br>RR<br>150.00<br>RR   | 13.70<br>4.39            | 0.26<br>0.31                   | 0.26<br>0.40                   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.9 4 ø 10.0 | ø 5.0 c/12                      | 37.07<br>20.76 |
| P4<br>1:20 | 14.00<br>X<br>25.00 | 25.00<br>150.00   | 150.00<br>RR<br>150.00<br>RR   | 14.93<br>5.32            | 0.25<br>0.31                   | 0.26<br>0.40                   | 1.57 2 ø 10.0<br>1.57 2 ø 10.0<br>0.9 4 ø 10.0 | ø 5.0 c/12                      | 37.07<br>20.76 |

## 12. RESULTADOS DO RADIER DO RESERVATÓRIO:

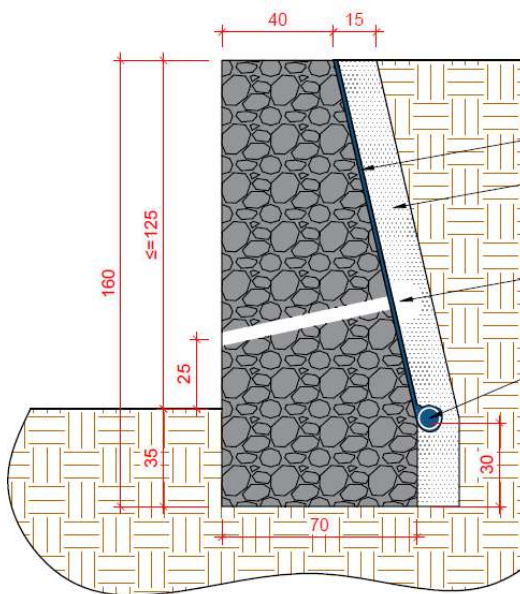
| ARMADURAS (RADIER) |         |                   |                              |                  |                              |
|--------------------|---------|-------------------|------------------------------|------------------|------------------------------|
| Seção              | Direção |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

Pressão de contato mínima: 0,31 kgf/cm<sup>2</sup>

Pressão de contato máxima: 0,65 kgf/cm<sup>2</sup>

## 13. RESULTADOS DAS CONTENÇÕES

A contenção possui altura máxima de 1,25 m e foram concebidas 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 | 1,25 | m |
| Altura enterrada    | h2 | 0,35 | m |
| Largura no topo     | bo | 0,40 | m |
| Largura na base     | b  | 0,70 | m |
| Peso por metro      |    |      | m |

| Resultados                       |          |       |        |
|----------------------------------|----------|-------|--------|
| Coef. De empuxo ativo            | Ka       | 0,34  | -      |
| Momento resistente               | Mr       | 13,87 | kN.m/m |
| Momento de tombamento            | M        | 6,88  | kN.m/m |
| FS Tombamento                    | FS_Tomb  | 6,99  | -      |
| Força Resistente de deslizamento | Fr       | 13,50 | kN/m   |
| Força de Deslizamento            | F        | 8,49  | kN/m   |
| FS Deslizamento                  | FS_Des   | 1,59  | -      |
| Tensão máxima no solo            | $\sigma$ | 20,35 | kN/m   |