

下水道用強化プラスチック複合管 (JSWAS K-2\_2023) 正誤表

| 訂正箇所<br>頁 行位置 | 誤  | 正  |                          |                               |                                |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|---------------|--|--|--------------------------|-------------------------------|--------------------------------|--------|-------|----|-------|-------|-------|-------|------------------------------------|-------|-------|-------|-------|-----------------------------------|-------|-------|-------|-------|--------|------|------|------|------|------------|--------|--------|--------|--------|------------|-------|-------|-------|-------|-------------------------|-------|-------|--------|--------|-------------------------|-------|-------|--------|--------|---------------------------|--------|--------|--------|--------|---------------------------|-------|---|-------|---|----------------------|---|-------|---|-------|----------------------|-------|---|-------|---|--------|---------------------------|-----|-----|-----|-----|---------|-----|-----|-----|-----|----|-------------------------------|--------------------------|-------------------------|--------------------------------|--|-------------|----|-------|-------|-------|-------|----|-------|-------|-------|-------|------------------------------------|-------|-------|-------|-------|-----------------------------------|-------|-------|-------|-------|--------|------|------|------|------|------------|--------|--------|--------|--------|------------|-------|-------|-------|-------|-------------------------|-------|--------------|--------|--------|-------------------------|-------|-------|--------|--------|---------------------------|--------|--------|---------------|---------------|---------------------------|-------|---|--------------|---|----------------------|---|-------|---|-------|----------------------|--------------|---|--------------|---|--------|---------------------------|-----|-----|-----|-----|---------|-----|-----|-----|-----|----|-------------------------------|--------------------------|-------------------------------|--------------------------|
| 37 9          | <p>(2) 曲げモーメント及び線荷重の計算<br/>埋戻し土と活荷重により発生する曲げモーメントおよび線荷重は、式(1-5)および式(1-6)により求める。</p> $M = (k_1 \cdot q + k_2 \cdot p) \cdot R^2 \quad \dots\dots\dots (1-5)$ $P_H = \frac{M}{0.31} \quad \dots\dots\dots (1-6)$   | <p>(2) 曲げモーメント及び線荷重の計算<br/>埋戻し土と活荷重により発生する曲げモーメントおよび線荷重は、式(1-5)および式(1-6)により求める。</p> $M = (k_1 \cdot q + k_2 \cdot p) \cdot R^2 \quad \dots\dots\dots (1-5)$ $P_H = \frac{M}{0.318R} \quad \dots\dots\dots (1-6)$   |                          |                               |                                |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
| 40 式1-10      | $S_i = \frac{-\frac{H_{pd}}{H_c} + \sqrt{\left(\frac{H_{pd}}{H_c}\right)^2 + 4\left(\frac{P_H}{P_c}\right)^2}}{2\left(\frac{P_H}{P_c}\right)^2}$   | $S_i = \frac{-\frac{H_{pd}}{H_c} + \sqrt{\left(\frac{H_{pd}}{H_c}\right)^2 + 4\left(\frac{P_H}{P_c}\right)^2}}{2\left(\frac{P_H}{P_c}\right)^2}$   |                          |                               |                                |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
| 41 式1-6       | $P_H = \frac{M}{0.318R} \quad \dots\dots\dots (1-6)$ $= (0.121 \times 124.2 + 0.011 \times 4.675) \times 0.51^2 = 3.922 \text{ kN} \cdot \text{m/m} \quad \dots\dots (\text{管底})$ $= \frac{3.922}{0.318 \times 0.51} = 24.183 \text{ kN/m}$  | $P_H = \frac{M}{0.318R} \quad \dots\dots\dots (1-6)$ $= \frac{3.922}{0.318 \times 0.51} = 24.183 \text{ kN/m}$   |                          |                               |                                |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
| 42 式1-10      | $S_i = \frac{-\frac{H_{pd}}{H_c} + \sqrt{\left(\frac{H_{pd}}{H_c}\right)^2 + 4\left(\frac{P_H}{P_c}\right)^2}}{2\left(\frac{P_H}{P_c}\right)^2} \quad \dots\dots\dots (1-10)$ $= \frac{-\frac{0.1}{0.4} + \sqrt{\left(\frac{0.1}{0.4}\right)^2 + 4\left(\frac{24.183}{103.2}\right)^2}}{2\left(\frac{24.183}{103.2}\right)^2} = 3.963$   | $S_i = \frac{-\frac{H_{pd}}{H_c} + \sqrt{\left(\frac{H_{pd}}{H_c}\right)^2 + 4\left(\frac{P_H}{P_c}\right)^2}}{2\left(\frac{P_H}{P_c}\right)^2} \quad \dots\dots\dots (1-10)$ $= \frac{-\frac{0.1}{0.4} + \sqrt{\left(\frac{0.1}{0.4}\right)^2 + 4\left(\frac{24.183}{103.2}\right)^2}}{2\left(\frac{24.183}{103.2}\right)^2} = \underline{2.560}$   |                          |                               |                                |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
| 45 4          | <p>上記より、許容内圧H<sub>p</sub>値=0.163MPaが、設計内圧H<sub>p</sub>d値=0.1MPaを上回るため使用可能となる。</p>  | <p>上記より、許容内圧H<sub>p</sub>値=0.163MPaが、設計内圧H<sub>p</sub>d値=<u>0.04</u>MPaを上回るため使用可能となる。</p>  |                          |                               |                                |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
| 45 式1-10      | $S_i = \frac{-\frac{H_{pd}}{H_c} + \sqrt{\left(\frac{H_{pd}}{H_c}\right)^2 + 4\left(\frac{P_H}{P_c}\right)^2}}{2\left(\frac{P_H}{P_c}\right)^2} \quad \dots\dots\dots (1-10)$ $= \frac{-\frac{0.04}{0.4} + \sqrt{\left(\frac{0.04}{0.4}\right)^2 + 4\left(\frac{11.039}{51.44}\right)^2}}{2\left(\frac{11.039}{51.44}\right)^2} = 4.702$   | $S_i = \frac{-\frac{H_{pd}}{H_c} + \sqrt{\left(\frac{H_{pd}}{H_c}\right)^2 + 4\left(\frac{P_H}{P_c}\right)^2}}{2\left(\frac{P_H}{P_c}\right)^2} \quad \dots\dots\dots (1-10)$ $= \frac{-\frac{0.04}{0.4} + \sqrt{\left(\frac{0.04}{0.4}\right)^2 + 4\left(\frac{11.039}{51.44}\right)^2}}{2\left(\frac{11.039}{51.44}\right)^2} = \underline{3.699}$ |                          |                               |                                |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
| 50 表1-13      | <table border="1"> <tr> <td rowspan="13">算<br/>結<br/>果</td> <td>管頂</td> <td>0.079</td> <td>0.079</td> <td>0.079</td> <td>0.079</td> </tr> <tr> <td>管底</td> <td>0.011</td> <td>0.011</td> <td>0.011</td> <td>0.011</td> </tr> <tr> <td>埋戻し土による鉛直土圧 q (kN/m<sup>2</sup>)</td> <td>124.2</td> <td>124.2</td> <td>102.6</td> <td>102.6</td> </tr> <tr> <td>活荷重による鉛直土圧 p (kN/m<sup>2</sup>)</td> <td>4.675</td> <td>4.675</td> <td>6.094</td> <td>6.094</td> </tr> <tr> <td>衝撃係数 i</td> <td>0.00</td> <td>0.00</td> <td>0.08</td> <td>0.08</td> </tr> <tr> <td>たわみ量 δ (m)</td> <td>0.0406</td> <td>0.0406</td> <td>0.1017</td> <td>0.1017</td> </tr> <tr> <td>たわみ率 V (%)</td> <td>3.980</td> <td>3.980</td> <td>4.985</td> <td>4.985</td> </tr> <tr> <td>曲げモーメント (管頂) M (kN・m/m)</td> <td>3.553</td> <td>3.552</td> <td>11.923</td> <td>11.923</td> </tr> <tr> <td>曲げモーメント (管底) M (kN・m/m)</td> <td>3.922</td> <td>3.922</td> <td>12.986</td> <td>12.986</td> </tr> <tr> <td>線荷重 P<sub>H</sub> (kN/m)</td> <td>24.183</td> <td>24.183</td> <td>40.033</td> <td>40.033</td> </tr> <tr> <td>許容内圧 H<sub>p</sub> (MPa)</td> <td>0.156</td> <td>—</td> <td>0.156</td> <td>—</td> </tr> <tr> <td>許容安全率 S<sub>o</sub></td> <td>—</td> <td>5.334</td> <td>—</td> <td>4.445</td> </tr> <tr> <td>許容安全率 S<sub>i</sub></td> <td>3.963</td> <td>—</td> <td>3.326</td> <td>—</td> </tr> <tr> <td rowspan="3">判<br/>定</td> <td>許容たわみ率 V<sub>a</sub> (%)</td> <td>4.0</td> <td>4.0</td> <td>5.0</td> <td>5.0</td> </tr> <tr> <td>許容安全率 S</td> <td>2.0</td> <td>3.0</td> <td>2.0</td> <td>3.0</td> </tr> <tr> <td>判定</td> <td>たわみ率、安全率および許容内圧が許容値を満足し、問題なし。</td> <td>たわみ率および安全率が許容値を満足し、問題なし。</td> <td>たわみ率、曲げ応力が許容値を満足し、問題なし。</td> <td>たわみ率、曲げ応力および設計内圧が許容値を満足し、問題なし。</td> </tr> </table> | 算<br>結<br>果  | 管頂                       | 0.079                         | 0.079                          | 0.079  | 0.079 | 管底 | 0.011 | 0.011 | 0.011 | 0.011 | 埋戻し土による鉛直土圧 q (kN/m <sup>2</sup> ) | 124.2 | 124.2 | 102.6 | 102.6 | 活荷重による鉛直土圧 p (kN/m <sup>2</sup> ) | 4.675 | 4.675 | 6.094 | 6.094 | 衝撃係数 i | 0.00 | 0.00 | 0.08 | 0.08 | たわみ量 δ (m) | 0.0406 | 0.0406 | 0.1017 | 0.1017 | たわみ率 V (%) | 3.980 | 3.980 | 4.985 | 4.985 | 曲げモーメント (管頂) M (kN・m/m) | 3.553 | 3.552 | 11.923 | 11.923 | 曲げモーメント (管底) M (kN・m/m) | 3.922 | 3.922 | 12.986 | 12.986 | 線荷重 P <sub>H</sub> (kN/m) | 24.183 | 24.183 | 40.033 | 40.033 | 許容内圧 H <sub>p</sub> (MPa) | 0.156 | — | 0.156 | — | 許容安全率 S <sub>o</sub> | — | 5.334 | — | 4.445 | 許容安全率 S <sub>i</sub> | 3.963 | — | 3.326 | — | 判<br>定 | 許容たわみ率 V <sub>a</sub> (%) | 4.0 | 4.0 | 5.0 | 5.0 | 許容安全率 S | 2.0 | 3.0 | 2.0 | 3.0 | 判定 | たわみ率、安全率および許容内圧が許容値を満足し、問題なし。 | たわみ率および安全率が許容値を満足し、問題なし。 | たわみ率、曲げ応力が許容値を満足し、問題なし。 | たわみ率、曲げ応力および設計内圧が許容値を満足し、問題なし。 | <table border="1"> <tr> <td rowspan="13">算<br/>結<br/>果</td> <td>管頂</td> <td>0.079</td> <td>0.079</td> <td>0.079</td> <td>0.079</td> </tr> <tr> <td>管底</td> <td>0.011</td> <td>0.011</td> <td>0.011</td> <td>0.011</td> </tr> <tr> <td>埋戻し土による鉛直土圧 q (kN/m<sup>2</sup>)</td> <td>124.2</td> <td>124.2</td> 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<td><b>2.560</b></td> <td>—</td> <td><b>2.618</b></td> <td>—</td> </tr> <tr> <td rowspan="3">判<br/>定</td> <td>許容たわみ率 V<sub>a</sub> (%)</td> <td>4.0</td> <td>4.0</td> <td>5.0</td> <td>5.0</td> </tr> <tr> <td>許容安全率 S</td> <td>2.0</td> <td>3.0</td> <td>2.0</td> <td>3.0</td> </tr> <tr> <td>判定</td> <td>たわみ率、安全率および許容内圧が許容値を満足し、問題なし。</td> <td>たわみ率および安全率が許容値を満足し、問題なし。</td> <td>たわみ率、安全率および許容内圧が許容値を満足し、問題なし。</td> <td>たわみ率および安全率が許容値を満足し、問題なし。</td> </tr> </table> | 算<br>結<br>果 | 管頂 | 0.079 | 0.079 | 0.079 | 0.079 | 管底 | 0.011 | 0.011 | 0.011 | 0.011 | 埋戻し土による鉛直土圧 q (kN/m <sup>2</sup> ) | 124.2 | 124.2 | 102.6 | 102.6 | 活荷重による鉛直土圧 p (kN/m <sup>2</sup> ) | 4.675 | 4.675 | 6.094 | 6.094 | 衝撃係数 i | 0.00 | 0.00 | 0.08 | 0.08 | たわみ量 δ (m) | 0.0406 | 0.0406 | 0.1017 | 0.1017 | たわみ率 V (%) | 3.980 | 3.980 | 4.985 | 4.985 | 曲げモーメント (管頂) M (kN・m/m) | 3.553 | <b>3.553</b> | 11.923 | 11.923 | 曲げモーメント (管底) M (kN・m/m) | 3.922 | 3.922 | 12.986 | 12.986 | 線荷重 P <sub>H</sub> (kN/m) | 24.183 | 24.183 | <b>40.036</b> | <b>40.036</b> | 許容内圧 H <sub>p</sub> (MPa) | 0.156 | — | <b>0.136</b> | — | 許容安全率 S <sub>o</sub> | — | 5.334 | — | 4.445 | 許容安全率 S <sub>i</sub> | <b>2.560</b> | — | <b>2.618</b> | — | 判<br>定 | 許容たわみ率 V <sub>a</sub> (%) | 4.0 | 4.0 | 5.0 | 5.0 | 許容安全率 S | 2.0 | 3.0 | 2.0 | 3.0 | 判定 | たわみ率、安全率および許容内圧が許容値を満足し、問題なし。 | たわみ率および安全率が許容値を満足し、問題なし。 | たわみ率、安全率および許容内圧が許容値を満足し、問題なし。 | たわみ率および安全率が許容値を満足し、問題なし。 |
| 算<br>結<br>果   | 管頂   |  | 0.079                    | 0.079                         | 0.079                          | 0.079  |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 管底   |  | 0.011                    | 0.011                         | 0.011                          | 0.011  |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 埋戻し土による鉛直土圧 q (kN/m <sup>2</sup> )   |  | 124.2                    | 124.2                         | 102.6                          | 102.6  |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 活荷重による鉛直土圧 p (kN/m <sup>2</sup> )  |  | 4.675                    | 4.675                         | 6.094                          | 6.094  |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 衝撃係数 i   |  | 0.00                     | 0.00                          | 0.08                           | 0.08   |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | たわみ量 δ (m)   |  | 0.0406                   | 0.0406                        | 0.1017                         | 0.1017 |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | たわみ率 V (%)   |  | 3.980                    | 3.980                         | 4.985                          | 4.985  |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 曲げモーメント (管頂) M (kN・m/m)  |  | 3.553                    | 3.552                         | 11.923                         | 11.923 |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 曲げモーメント (管底) M (kN・m/m)  |  | 3.922                    | 3.922                         | 12.986                         | 12.986 |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 線荷重 P <sub>H</sub> (kN/m)  |  | 24.183                   | 24.183                        | 40.033                         | 40.033 |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 許容内圧 H <sub>p</sub> (MPa)  |  | 0.156                    | —                             | 0.156                          | —      |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 許容安全率 S <sub>o</sub>   |  | —                        | 5.334                         | —                              | 4.445  |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 許容安全率 S <sub>i</sub>   | 3.963  | —                        | 3.326                         | —                              |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
| 判<br>定        | 許容たわみ率 V <sub>a</sub> (%)  | 4.0  | 4.0                      | 5.0                           | 5.0                            |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 許容安全率 S  | 2.0  | 3.0                      | 2.0                           | 3.0                            |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 判定   | たわみ率、安全率および許容内圧が許容値を満足し、問題なし。  | たわみ率および安全率が許容値を満足し、問題なし。 | たわみ率、曲げ応力が許容値を満足し、問題なし。       | たわみ率、曲げ応力および設計内圧が許容値を満足し、問題なし。 |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
| 算<br>結<br>果   | 管頂   | 0.079  | 0.079                    | 0.079                         | 0.079                          |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 管底   | 0.011  | 0.011                    | 0.011                         | 0.011                          |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 埋戻し土による鉛直土圧 q (kN/m <sup>2</sup> )   | 124.2  | 124.2                    | 102.6                         | 102.6                          |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 活荷重による鉛直土圧 p (kN/m <sup>2</sup> )  | 4.675  | 4.675                    | 6.094                         | 6.094                          |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 衝撃係数 i   | 0.00   | 0.00                     | 0.08                          | 0.08                           |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | たわみ量 δ (m)   | 0.0406   | 0.0406                   | 0.1017                        | 0.1017                         |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | たわみ率 V (%)   | 3.980  | 3.980                    | 4.985                         | 4.985                          |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 曲げモーメント (管頂) M (kN・m/m)  | 3.553  | <b>3.553</b>             | 11.923                        | 11.923                         |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 曲げモーメント (管底) M (kN・m/m)  | 3.922  | 3.922                    | 12.986                        | 12.986                         |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 線荷重 P <sub>H</sub> (kN/m)  | 24.183   | 24.183                   | <b>40.036</b>                 | <b>40.036</b>                  |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 許容内圧 H <sub>p</sub> (MPa)  | 0.156  | —                        | <b>0.136</b>                  | —                              |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 許容安全率 S <sub>o</sub>   | —  | 5.334                    | —                             | 4.445                          |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 許容安全率 S <sub>i</sub>   | <b>2.560</b>   | —                        | <b>2.618</b>                  | —                              |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
| 判<br>定        | 許容たわみ率 V <sub>a</sub> (%)  | 4.0  | 4.0                      | 5.0                           | 5.0                            |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 許容安全率 S  | 2.0  | 3.0                      | 2.0                           | 3.0                            |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |
|               | 判定   | たわみ率、安全率および許容内圧が許容値を満足し、問題なし。  | たわみ率および安全率が許容値を満足し、問題なし。 | たわみ率、安全率および許容内圧が許容値を満足し、問題なし。 | たわみ率および安全率が許容値を満足し、問題なし。       |        |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |       |        |        |                         |       |       |        |        |                           |        |        |        |        |                           |       |   |       |   |                      |   |       |   |       |                      |       |   |       |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                         |                                |  |             |    |       |       |       |       |    |       |       |       |       |                                    |       |       |       |       |                                   |       |       |       |       |        |      |      |      |      |            |        |        |        |        |            |       |       |       |       |                         |       |              |        |        |                         |       |       |        |        |                           |        |        |               |               |                           |       |   |              |   |                      |   |       |   |       |                      |              |   |              |   |        |                           |     |     |     |     |         |     |     |     |     |    |                               |                          |                               |                          |

| 訂正箇所             |                                     | 誤  |  | 正                                   |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|------------------|-------------------------------------|--|--|-------------------------------------|--------|--------|----------|------|------|-------------------|--------|--------|--------------|-------|-------|------------------|----------|-------|-------|-------|-------|------------------|----------|-------|-------|------------------|--|--------|--------|------------------|--|-------|---|-----------|--|---|-------|-----------|--|-------|---|--------|------------------|-----|-----|-----------|-----|-----|----|--|-------------------------------|--------------------------|---|------------------|-------------------------------------|--------|--------|----------|------|------|-------------------|--------|--------|--------------|-------|-------|------------------|----------|-------|-------|-------|-------|------------------|----------|-------|-------|------------------|--|--------|--------|------------------|--|-------|---|-----------|--|---|-------|-----------|--|--------------|---|--------|------------------|-----|-----|-----------|-----|-----|----|--|-------------------------------|--------------------------|
| 頁                | 行位置                                 |  |  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 51               | 表1-14                               | <table border="1"> <tr> <td rowspan="10">計<br/>算<br/>結<br/>果</td> <td>活荷重による鉛直土圧 <math>p</math> (kN/m<sup>2</sup>)</td> <td>14.252</td> <td>14.252</td> </tr> <tr> <td>衝撃係数 <math>i</math></td> <td>0.35</td> <td>0.35</td> </tr> <tr> <td>たわみ量 <math>\delta</math> (m)</td> <td>0.0467</td> <td>0.0467</td> </tr> <tr> <td>たわみ率 <math>V</math> (%)</td> <td>4.592</td> <td>4.592</td> </tr> <tr> <td rowspan="2">曲げモーメント (管頂) <math>M</math></td> <td rowspan="2">(kN・m/m)</td> <td>1.785</td> <td>1.785</td> </tr> <tr> <td>1.730</td> <td>1.730</td> </tr> <tr> <td>曲げモーメント (管底) <math>M</math></td> <td>(kN・m/m)</td> <td>1.730</td> <td>1.730</td> </tr> <tr> <td>線荷重 <math>P_H</math> (kN/m)</td> <td></td> <td>11.039</td> <td>11.039</td> </tr> <tr> <td>許容内圧 <math>H_P</math> (MPa)</td> <td></td> <td>0.163</td> <td>—</td> </tr> <tr> <td>安全率 <math>S_o</math></td> <td></td> <td>—</td> <td>5.824</td> </tr> <tr> <td>安全率 <math>S_i</math></td> <td></td> <td>4.702</td> <td>—</td> </tr> <tr> <td rowspan="2">判<br/>定</td> <td>許容たわみ率 <math>V_a</math> (%)</td> <td>5.0</td> <td>5.0</td> </tr> <tr> <td>許容安全率 <math>S</math></td> <td>2.0</td> <td>3.0</td> </tr> <tr> <td colspan="2">判定</td> <td>たわみ率、安全率および許容内圧が許容値を満足し、問題なし。</td> <td>たわみ率および安全率が許容値を満足し、問題なし。</td> </tr> </table> | 計<br>算<br>結<br>果   | 活荷重による鉛直土圧 $p$ (kN/m <sup>2</sup> ) | 14.252 | 14.252 | 衝撃係数 $i$ | 0.35 | 0.35 | たわみ量 $\delta$ (m) | 0.0467 | 0.0467 | たわみ率 $V$ (%) | 4.592 | 4.592 | 曲げモーメント (管頂) $M$ | (kN・m/m) | 1.785 | 1.785 | 1.730 | 1.730 | 曲げモーメント (管底) $M$ | (kN・m/m) | 1.730 | 1.730 | 線荷重 $P_H$ (kN/m) |  | 11.039 | 11.039 | 許容内圧 $H_P$ (MPa) |  | 0.163 | — | 安全率 $S_o$ |  | — | 5.824 | 安全率 $S_i$ |  | 4.702 | — | 判<br>定 | 許容たわみ率 $V_a$ (%) | 5.0 | 5.0 | 許容安全率 $S$ | 2.0 | 3.0 | 判定 |  | たわみ率、安全率および許容内圧が許容値を満足し、問題なし。 | たわみ率および安全率が許容値を満足し、問題なし。 | <table border="1"> <tr> <td rowspan="10">計<br/>算<br/>結<br/>果</td> <td>活荷重による鉛直土圧 <math>p</math> (kN/m<sup>2</sup>)</td> <td>14.252</td> <td>14.252</td> </tr> <tr> <td>衝撃係数 <math>i</math></td> <td>0.35</td> <td>0.35</td> </tr> <tr> <td>たわみ量 <math>\delta</math> (m)</td> <td>0.0467</td> <td>0.0467</td> </tr> <tr> <td>たわみ率 <math>V</math> (%)</td> <td>4.592</td> <td>4.592</td> </tr> <tr> <td rowspan="2">曲げモーメント (管頂) <math>M</math></td> <td rowspan="2">(kN・m/m)</td> <td>1.785</td> <td>1.785</td> </tr> <tr> <td>1.730</td> <td>1.730</td> </tr> <tr> <td>曲げモーメント (管底) <math>M</math></td> <td>(kN・m/m)</td> <td>1.730</td> <td>1.730</td> </tr> <tr> <td>線荷重 <math>P_H</math> (kN/m)</td> <td></td> <td>11.039</td> <td>11.039</td> </tr> <tr> <td>許容内圧 <math>H_P</math> (MPa)</td> <td></td> <td>0.163</td> <td>—</td> </tr> <tr> <td>安全率 <math>S_o</math></td> <td></td> <td>—</td> <td>5.824</td> </tr> <tr> <td>安全率 <math>S_i</math></td> <td></td> <td><b>3.699</b></td> <td>—</td> </tr> <tr> <td rowspan="2">判<br/>定</td> <td>許容たわみ率 <math>V_a</math> (%)</td> <td>5.0</td> <td>5.0</td> </tr> <tr> <td>許容安全率 <math>S</math></td> <td>2.0</td> <td>3.0</td> </tr> <tr> <td colspan="2">判定</td> <td>たわみ率、安全率および許容内圧が許容値を満足し、問題なし。</td> <td>たわみ率および安全率が許容値を満足し、問題なし。</td> </tr> </table> | 計<br>算<br>結<br>果 | 活荷重による鉛直土圧 $p$ (kN/m <sup>2</sup> ) | 14.252 | 14.252 | 衝撃係数 $i$ | 0.35 | 0.35 | たわみ量 $\delta$ (m) | 0.0467 | 0.0467 | たわみ率 $V$ (%) | 4.592 | 4.592 | 曲げモーメント (管頂) $M$ | (kN・m/m) | 1.785 | 1.785 | 1.730 | 1.730 | 曲げモーメント (管底) $M$ | (kN・m/m) | 1.730 | 1.730 | 線荷重 $P_H$ (kN/m) |  | 11.039 | 11.039 | 許容内圧 $H_P$ (MPa) |  | 0.163 | — | 安全率 $S_o$ |  | — | 5.824 | 安全率 $S_i$ |  | <b>3.699</b> | — | 判<br>定 | 許容たわみ率 $V_a$ (%) | 5.0 | 5.0 | 許容安全率 $S$ | 2.0 | 3.0 | 判定 |  | たわみ率、安全率および許容内圧が許容値を満足し、問題なし。 | たわみ率および安全率が許容値を満足し、問題なし。 |
| 計<br>算<br>結<br>果 | 活荷重による鉛直土圧 $p$ (kN/m <sup>2</sup> ) | 14.252   |  | 14.252                              |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 衝撃係数 $i$                            | 0.35   |  | 0.35                                |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | たわみ量 $\delta$ (m)                   | 0.0467   |  | 0.0467                              |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | たわみ率 $V$ (%)                        | 4.592  |  | 4.592                               |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 曲げモーメント (管頂) $M$                    | (kN・m/m)   |  | 1.785                               | 1.785  |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  |                                     |  |  | 1.730                               | 1.730  |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 曲げモーメント (管底) $M$                    | (kN・m/m)   |  | 1.730                               | 1.730  |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 線荷重 $P_H$ (kN/m)                    |  |  | 11.039                              | 11.039 |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 許容内圧 $H_P$ (MPa)                    |  |  | 0.163                               | —      |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 安全率 $S_o$                           |  | —  | 5.824                               |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 安全率 $S_i$        |                                     | 4.702  | —  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 判<br>定           | 許容たわみ率 $V_a$ (%)                    | 5.0  | 5.0  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 許容安全率 $S$                           | 2.0  | 3.0  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 判定               |                                     | たわみ率、安全率および許容内圧が許容値を満足し、問題なし。  | たわみ率および安全率が許容値を満足し、問題なし。   |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 計<br>算<br>結<br>果 | 活荷重による鉛直土圧 $p$ (kN/m <sup>2</sup> ) | 14.252   | 14.252   |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 衝撃係数 $i$                            | 0.35   | 0.35   |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | たわみ量 $\delta$ (m)                   | 0.0467   | 0.0467   |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | たわみ率 $V$ (%)                        | 4.592  | 4.592  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 曲げモーメント (管頂) $M$                    | (kN・m/m)   | 1.785  | 1.785                               |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  |                                     |  | 1.730  | 1.730                               |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 曲げモーメント (管底) $M$                    | (kN・m/m)   | 1.730  | 1.730                               |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 線荷重 $P_H$ (kN/m)                    |  | 11.039   | 11.039                              |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 許容内圧 $H_P$ (MPa)                    |  | 0.163  | —                                   |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 安全率 $S_o$                           |  | —  | 5.824                               |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 安全率 $S_i$        |                                     | <b>3.699</b>   | —  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 判<br>定           | 許容たわみ率 $V_a$ (%)                    | 5.0  | 5.0  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
|                  | 許容安全率 $S$                           | 2.0  | 3.0  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 判定               |                                     | たわみ率、安全率および許容内圧が許容値を満足し、問題なし。  | たわみ率および安全率が許容値を満足し、問題なし。   |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 62               | 図2-6                                |  |  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 63               | 全体                                  | $F_L = R/L$ $= 0.349 \div 0.768 = 0.454$ <p>ここで、<math>F_L = 0.454</math> だから、液状化するものとみなす。</p> $R = C_w \cdot R_L$ $= 1.459 \times 0.239 = 0.349$ $L = \gamma_d \cdot k_w \cdot \sigma_v / \sigma'_v$ $= 0.897 \times 0.6 \times 0.1186 \div 0.0831 = 0.768$ $\gamma_d = 1.0 - 0.015x$ $= 1.0 - 0.015 \times 6.85 = 0.897$ $\sigma_v = \{ \gamma_{s1} \cdot h_w + \gamma_{s2} (x - h_w) \} / 1000$ $= \{ 17 \times 3.3 + 18 \times (6.85 - 3.3) \} \div 1000 = 0.1186$ $\sigma'_v = \{ \gamma_{s1} \cdot h_w + \gamma'_{s2} (x - h_w) \} / 1000$ $= \{ 17 \times 3.3 + 8 \times (6.85 - 3.3) \} \div 1000 = 0.0831$ <p>地震動特性による補正係数 <math>C_w</math> は、レベル2地震動の場合以下より求める。繰り返し三軸強度比 <math>R_L</math> は(2)より求める。</p> $C_w = \begin{cases} 1.0 & (R_L \leq 0.1) \\ 3.3R_L + 0.67 & (0.1 < R_L \leq 0.4) \\ 2.0 & (0.4 < R_L) \end{cases}$ $= 3.3 \times 0.239 + 0.67 = 1.459$  | $F_L = R/L$ $= 0.369 \div 0.768 = 0.480$ <p>ここで、<math>F_L = 0.480</math> だから、液状化するものとみなす。</p> $R = C_w \cdot R_L$ $= 1.488 \times 0.248 = 0.369$ $L = \gamma_d \cdot k_w \cdot \sigma_v / \sigma'_v$ $= 0.897 \times 0.6 \times 0.1186 \div 0.0831 = 0.768$ $\gamma_d = 1.0 - 0.015x$ $= 1.0 - 0.015 \times 6.85 = 0.897$ $\sigma_v = \{ \gamma_{s1} \cdot h_w + \gamma_{s2} (x - h_w) \} / 1000$ $= \{ 18 \times 0.5 + 17 \times 2.8 + 17 \times 1.9 + 18 \times (6.85 - 5.2) \} \div 1000 = 0.1186$ $\sigma'_v = \{ \gamma_{s1} \cdot h_w + \gamma'_{s2} (x - h_w) \} / 1000$ $= \{ 18 \times 0.5 + 17 \times 2.8 + 7 \times 1.9 + 8 \times (6.85 - 5.2) \} \div 1000 = 0.0831$ <p>地震動特性による補正係数 <math>C_w</math> は、レベル2地震動の場合以下より求める。繰り返し三軸強度比 <math>R_L</math> は(2)より求める。</p> $C_w = \begin{cases} 1.0 & (R_L \leq 0.1) \\ 3.3R_L + 0.67 & (0.1 < R_L \leq 0.4) \\ 2.0 & (0.4 < R_L) \end{cases}$ $= 3.3 \times 0.248 + 0.67 = 1.488$ |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 64               | 上半分                                 | $R_L = 0.0882 \sqrt{N_a} / 1.7$ $= 0.0882 \times \sqrt{12.492} \div 1.7 = 0.239$ $N_a = C_1 \cdot N_1 + C_2$ $= 1.1 \times 11.104 + 0.278 = 12.492$ $N_1 = 170 \cdot N / (\sigma'_v + 70)$ $= 170 \times 10 \div (0.0831 \times 1000 + 70) = 11.104$ $C_1 = (F_c + 40) / 50$ $= (15 + 40) \div 50 = 1.1$ $C_2 = (F_c - 10) / 18$ $= (15 - 10) \div 18 = 0.278$   | $R_L = 0.0882 \sqrt{(0.85N_a + 2.1)} / 1.7$ $= 0.0882 \sqrt{(0.85 \times 13.371 + 2.1)} \div 1.7 = 0.248$ $N_a = C_{FC}(N_1 + 2.47) - 2.47$ $= 1.167 \times (11.104 + 2.47) - 2.47 = 13.371$ $N_1 = 170N / (\sigma'_v \times 1000 + 70)$ $= 170 \times 10 \div (0.0831 \times 1000 + 70) = 11.104$ $C_{FC} = (F_c + 20) / 30$ $= (15 + 20) \div 30 = 1.167$ $C_2 = (F_c - 10) / 18$ $= (15 - 10) \div 18 = 0.278$  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |
| 68               | 最上部                                 | $\delta_{s\max} = \frac{l}{\cos\left(\frac{n-1}{2} \cdot \theta\right)} - l$ $= \frac{4}{\cos\left(\frac{12.5-1}{2} \times 0^\circ 7' 16''\right)} - 4 = 0.029(\text{m})$  | $\delta_{s\max} = \frac{l}{\cos\left(\frac{n-1}{2} \cdot \theta\right)} - l$ $= \frac{4}{\cos\left(\frac{12.5-1}{2} \times 0^\circ 7' 16''\right)} - 4 = \underline{0.00029(\text{m})}$  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |       |   |        |                  |     |     |           |     |     |    |  |                               |                          |   |                  |                                     |        |        |          |      |      |                   |        |        |              |       |       |                  |          |       |       |       |       |                  |          |       |       |                  |  |        |        |                  |  |       |   |           |  |   |       |           |  |              |   |        |                  |     |     |           |     |     |    |  |                               |                          |

| 訂正箇所              |                           | 誤  |                        |                                     |              | 正       |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|-------------------|---------------------------|--|------------------------|-------------------------------------|--------------|---------|--|---|------------------|-------------------|-----------|-------------------------------------|------------------------|----------------|----------------|---------------------|---------------------------|------|---------------------|---------|-----------------|-----------|------------|------------------------|------------|---------|-------------------|---------------------------|--------|---------------------------|------|--------------------------|-----------|------------------------|---------------------|---------|-------------------|-------------------|---------|---------|----------------------|------------|-------|---------|------|---|---------|---------|---------|---------|-------|-------|----|-------------------|-----------|------------|------------------------|------------|---------|-------------------|---------------------------|---------|---------------------|----------|-----------------|-----------|------------|------------------------|------------|----------|-------------------|---------------------------|------|---------------------------|----------|--------------------------|-----------|------------------------|---------------------|----------|-------------------|-------------------|---------|----------|----------------------|------------|-----|-----|----------|---|----------|--------|------|---------|-----|---|----------|----------|--------|------|--|-----|----------|----------|----------|--------|------|---------|-----|----------|----------|----------|--------|-------|----|---------|---------|----------|----------|---------|--------|--|-----|---------|----------|---------|-------|---------|--|-----|---------|----------|---------|-------|------|---------|-----|---------|----------|---------|--------|------|-----|----------|---------|---------|---------|------------|------|--|-----|----------|--|--|-----|------------------|------------------|--|-----|-------------------------------------|--------------|----------------|----------------|---------------------|----|---|---------|----------|---------|--------|------|----------|----|---------|---------|---------|--------|------|--|----|---------|---------|---------|-------|------|--|----|---------|---------|---------|-------|-------|--|----|---------|---------|---------|-------|-------|--|----|----------|---------|----------|--------|-------|--|----|----------|---------|----------|--------|-------|--|----|----------|---------|----------|--------|-------|--|----|----------|---------|----------|--------|------|----|----|----------|---------|----------|--------|------|--|-----|----------|----------|----------|--------|------|--|-----|----------|----------|----------|--------|------|--|-----|----------|----------|----------|--------|------|--|-----|----------|----------|----------|--------|-------|--|-----|---------|----------|----------|--------|--------|--|-----|---------|----------|---------|-------|-------|--|-----|---------|----------|---------|-------|------|--|-----|---------|----------|---------|--------|------|----|-----|---------|---------|---------|------------|------|
| 頁                 | 行位置                       |  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 72                | 表2-9                      | <table border="1"> <thead> <tr> <th colspan="2">鉛直断面の位置</th> <th colspan="2">地震で付加的に発生する<br/>曲げモーメント M(X)<br/>(kN・m/m)</th> </tr> <tr> <th>X</th> <th>(°)</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr><td>管頂</td><td>0</td><td colspan="2">0</td></tr> <tr><td></td><td>10</td><td colspan="2">0.07578</td></tr> <tr><td></td><td>20</td><td colspan="2">0.14243</td></tr> <tr><td></td><td>30</td><td colspan="2">0.19190</td></tr> <tr><td></td><td>40</td><td colspan="2">0.21822</td></tr> <tr><td></td><td>50</td><td colspan="2">0.21822</td></tr> <tr><td></td><td>60</td><td colspan="2">0.19189</td></tr> <tr><td></td><td>70</td><td colspan="2">0.14243</td></tr> <tr><td></td><td>80</td><td colspan="2">0.07579</td></tr> <tr><td>管側</td><td>90</td><td colspan="2">0</td></tr> <tr><td></td><td>100</td><td colspan="2">-0.07579</td></tr> <tr><td></td><td>110</td><td colspan="2">-0.14243</td></tr> <tr><td></td><td>120</td><td colspan="2">-0.19190</td></tr> <tr><td></td><td>130</td><td colspan="2">-0.21822</td></tr> <tr><td></td><td>140</td><td colspan="2">-0.21822</td></tr> <tr><td></td><td>150</td><td colspan="2">-0.19190</td></tr> <tr><td></td><td>160</td><td colspan="2">-0.14243</td></tr> <tr><td></td><td>170</td><td colspan="2">-0.07579</td></tr> <tr><td>管底</td><td>180</td><td colspan="2">0</td></tr> </tbody> </table>  |                        |                                     |              | 鉛直断面の位置 |  | 地震で付加的に発生する<br>曲げモーメント M(X)<br>(kN・m/m) |                  | X                 | (°)       |                                     |                        | 管頂             | 0              | 0                   |                           |      | 10                  | 0.07578 |                 |           | 20         | 0.14243                |            |         | 30                | 0.19190                   |        |                           | 40   | 0.21822                  |           |                        | 50                  | 0.21822 |                   |                   | 60      | 0.19189 |                      |            | 70    | 0.14243 |      |   | 80      | 0.07579 |         | 管側      | 90    | 0     |    |                   | 100       | -0.07579   |                        |            | 110     | -0.14243          |                           |         | 120                 | -0.19190 |                 |           | 130        | -0.21822               |            |          | 140               | -0.21822                  |      |                           | 150      | -0.19190                 |           |                        | 160                 | -0.14243 |                   |                   | 170     | -0.07579 |                      | 管底         | 180 | 0   |          | <table border="1"> <thead> <tr> <th colspan="2">鉛直断面の位置</th> <th colspan="2">地震で付加的に発生する<br/>曲げモーメント M(X)<br/>(kN・m/m)</th> </tr> <tr> <th>X</th> <th>(°)</th> <th colspan="2"></th> </tr> </thead> <tbody> <tr><td>管頂</td><td>0</td><td colspan="2">0</td></tr> <tr><td></td><td>10</td><td colspan="2">0.07586</td></tr> <tr><td></td><td>20</td><td colspan="2">0.14257</td></tr> <tr><td></td><td>30</td><td colspan="2">0.19208</td></tr> <tr><td></td><td>40</td><td colspan="2">0.21842</td></tr> <tr><td></td><td>50</td><td colspan="2">0.21842</td></tr> <tr><td></td><td>60</td><td colspan="2">0.19208</td></tr> <tr><td></td><td>70</td><td colspan="2">0.14257</td></tr> <tr><td></td><td>80</td><td colspan="2">0.07586</td></tr> <tr><td>管側</td><td>90</td><td colspan="2">0</td></tr> <tr><td></td><td>100</td><td colspan="2">-0.07586</td></tr> <tr><td></td><td>110</td><td colspan="2">-0.14257</td></tr> <tr><td></td><td>120</td><td colspan="2">-0.19208</td></tr> <tr><td></td><td>130</td><td colspan="2">-0.21842</td></tr> <tr><td></td><td>140</td><td colspan="2">-0.21842</td></tr> <tr><td></td><td>150</td><td colspan="2">-0.19208</td></tr> <tr><td></td><td>160</td><td colspan="2">-0.14257</td></tr> <tr><td></td><td>170</td><td colspan="2">-0.07586</td></tr> <tr><td>管底</td><td>180</td><td colspan="2">0</td></tr> </tbody> </table> |          |        |      | 鉛直断面の位置 |     | 地震で付加的に発生する<br>曲げモーメント M(X)<br>(kN・m/m) |          | X        | (°)    |      |  | 管頂  | 0        | 0        |          |        | 10   | 0.07586 |     |          | 20       | 0.14257  |        |       | 30 | 0.19208 |         |          | 40       | 0.21842 |        |  | 50  | 0.21842 |          |         | 60    | 0.19208 |  |     | 70      | 0.14257  |         |       | 80   | 0.07586 |     | 管側      | 90       | 0       |        |      | 100 | -0.07586 |         |         | 110     | -0.14257   |      |  | 120 | -0.19208 |  |  | 130 | -0.21842         |                  |  | 140 | -0.21842                            |              |                | 150            | -0.19208            |    |   | 160     | -0.14257 |         |        | 170  | -0.07586 |    | 管底      | 180     | 0       |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 鉛直断面の位置           |                           | 地震で付加的に発生する<br>曲げモーメント M(X)<br>(kN・m/m)  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| X                 | (°)                       |  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管頂                | 0                         | 0  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 10                        | 0.07578  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 20                        | 0.14243  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 30                        | 0.19190  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 40                        | 0.21822  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 50                        | 0.21822  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 60                        | 0.19189  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 70                        | 0.14243  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 80                        | 0.07579  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管側                | 90                        | 0  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 100                       | -0.07579   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 110                       | -0.14243   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 120                       | -0.19190   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 130                       | -0.21822   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 140                       | -0.21822   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 150                       | -0.19190   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 160                       | -0.14243   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 170                       | -0.07579   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管底                | 180                       | 0  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 鉛直断面の位置           |                           | 地震で付加的に発生する<br>曲げモーメント M(X)<br>(kN・m/m)  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| X                 | (°)                       |  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管頂                | 0                         | 0  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 10                        | 0.07586  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 20                        | 0.14257  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 30                        | 0.19208  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 40                        | 0.21842  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 50                        | 0.21842  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 60                        | 0.19208  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 70                        | 0.14257  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 80                        | 0.07586  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管側                | 90                        | 0  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 100                       | -0.07586   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 110                       | -0.14257   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 120                       | -0.19208   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 130                       | -0.21842   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 140                       | -0.21842   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 150                       | -0.19208   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 160                       | -0.14257   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 170                       | -0.07586   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管底                | 180                       | 0  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 74                | 表2-11                     | <table border="1"> <thead> <tr> <th rowspan="2">鉛直断面の位置<br/>X (°)</th> <th colspan="3">曲げモーメント (kN・m/m)</th> <th rowspan="2">地震時の線荷重<br/>P<sub>H</sub><br/>(kN/m)</th> <th rowspan="2">地震時の安全率<br/>S</th> </tr> <tr> <th>常時荷重分<br/>M'(X)</th> <th>地震時付加分<br/>M(X)</th> <th>地震時合計<br/>M'(X)+M(X)</th> </tr> </thead> <tbody> <tr><td>管頂</td><td>0</td><td>2.15951</td><td>0.00000</td><td>2.15951</td><td>11.128</td><td>7.01</td></tr> <tr><td></td><td>10</td><td>2.00097</td><td>0.07578</td><td>2.07675</td><td>10.702</td><td>7.29</td></tr> <tr><td></td><td>20</td><td>1.55678</td><td>0.14243</td><td>1.69921</td><td>8.756</td><td>8.91</td></tr> <tr><td></td><td>30</td><td>0.91335</td><td>0.19190</td><td>1.10525</td><td>5.695</td><td>13.70</td></tr> <tr><td></td><td>40</td><td>0.18975</td><td>0.21822</td><td>0.40797</td><td>2.102</td><td>37.10</td></tr> 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<tr><td></td><td>140</td><td>0.07689</td><td>-0.21822</td><td>-0.14133</td><td>-0.728</td><td>107.10</td></tr> <tr><td></td><td>150</td><td>0.94764</td><td>-0.19190</td><td>0.75574</td><td>3.894</td><td>20.03</td></tr> <tr><td></td><td>160</td><td>1.71943</td><td>-0.14243</td><td>1.57700</td><td>8.126</td><td>9.60</td></tr> <tr><td></td><td>170</td><td>2.25051</td><td>-0.07579</td><td>2.17472</td><td>11.206</td><td>6.96</td></tr> <tr><td>管底</td><td>180</td><td>2.43975</td><td>0.00000</td><td>2.43975</td><td>Max 12.572</td><td>6.20</td></tr> </tbody> </table> |                        |                                     |              |         |  | 鉛直断面の位置<br>X (°)                        | 曲げモーメント (kN・m/m) |                   |           | 地震時の線荷重<br>P <sub>H</sub><br>(kN/m) | 地震時の安全率<br>S           | 常時荷重分<br>M'(X) | 地震時付加分<br>M(X) | 地震時合計<br>M'(X)+M(X) | 管頂                        | 0    | 2.15951             | 0.00000 | 2.15951         | 11.128    | 7.01       |                        | 10         | 2.00097 | 0.07578           | 2.07675                   | 10.702 | 7.29                      |      | 20                       | 1.55678   | 0.14243                | 1.69921             | 8.756   | 8.91              |                   | 30      | 0.91335 | 0.19190              | 1.10525    | 5.695 | 13.70   |      | 40  | 0.18975 | 0.21822 | 0.40797 | 2.102   | 37.10 |       | 50 | -0.49252          | 0.21822   | -0.27430   | -1.413                 | 55.18      |         | 60                | -1.03990                  | 0.19189 | -0.84800            | -4.370   | 17.85           |           | 70         | -1.40902               | 0.14243    | -1.26659 | -6.527            | 11.95                     |      | 80                        | -1.61538 | 0.07579                  | -1.53959  | -7.934                 | 9.83                | 管側       | 90                | -1.72556          | 0.00000 | -1.72556 | -8.892               | 8.77       |     | 100 | -1.79832 | -0.07579  | -1.87410 | -9.657 | 8.08 |         | 110 | -1.73734                                | -0.14243 | -1.87977 | -9.687 | 8.05 |  | 120 | -1.39282 | -0.19190 | -1.58472 | -8.166 | 9.55 |         | 130 | -0.74399 | -0.21822 | -0.96221 | -4.958 | 15.73 |    | 140     | 0.07689 | -0.21822 | -0.14133 | -0.728  | 107.10 |  | 150 | 0.94764 | -0.19190 | 0.75574 | 3.894 | 20.03   |  | 160 | 1.71943 | -0.14243 | 1.57700 | 8.126 | 9.60 |         | 170 | 2.25051 | -0.07579 | 2.17472 | 11.206 | 6.96 | 管底  | 180      | 2.43975 | 0.00000 | 2.43975 | Max 12.572 | 6.20 | <table border="1"> <thead> <tr> <th rowspan="2">鉛直断面の位置<br/>X (°)</th> <th colspan="3">曲げモーメント (kN・m/m)</th> <th rowspan="2">地震時の線荷重<br/>P<sub>H</sub><br/>(kN/m)</th> <th rowspan="2">地震時の安全率<br/>S</th> </tr> <tr> <th>常時荷重分<br/>M'(X)</th> <th>地震時付加分<br/>M(X)</th> <th>地震時合計<br/>M'(X)+M(X)</th> </tr> </thead> <tbody> <tr><td>管頂</td><td>0</td><td>2.15951</td><td>0.00000</td><td>2.15951</td><td>11.128</td><td>7.01</td></tr> 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</table> |     |          |  |  |     | 鉛直断面の位置<br>X (°) | 曲げモーメント (kN・m/m) |  |     | 地震時の線荷重<br>P <sub>H</sub><br>(kN/m) | 地震時の安全率<br>S | 常時荷重分<br>M'(X) | 地震時付加分<br>M(X) | 地震時合計<br>M'(X)+M(X) | 管頂 | 0 | 2.15951 | 0.00000  | 2.15951 | 11.128 | 7.01 |          | 10 | 2.00097 | 0.07578 | 2.07675 | 10.702 | 7.29 |  | 20 | 1.55678 | 0.14243 | 1.69921 | 8.757 | 8.91 |  | 30 | 0.91335 | 0.19190 | 1.10525 | 5.696 | 13.70 |  | 40 | 0.18975 | 0.21822 | 0.40797 | 2.103 | 37.10 |  | 50 | -0.49252 | 0.21822 | -0.27430 | -1.413 | 55.18 |  | 60 | -1.03990 | 0.19189 | -0.84800 | -4.369 | 17.85 |  | 70 | -1.40902 | 0.14243 | -1.26659 | -6.526 | 11.95 |  | 80 | -1.61538 | 0.07579 | -1.53959 | -7.933 | 9.83 | 管側 | 90 | -1.72556 | 0.00000 | -1.72556 | -8.892 | 8.77 |  | 100 | -1.79832 | -0.07579 | -1.87410 | -9.658 | 8.08 |  | 110 | -1.73734 | -0.14243 | -1.87977 | -9.687 | 8.05 |  | 120 | -1.39282 | -0.19190 | -1.58472 | -8.167 | 9.55 |  | 130 | -0.74399 | -0.21822 | -0.96221 | -4.959 | 15.73 |  | 140 | 0.07689 | -0.21822 | -0.14133 | -0.729 | 107.10 |  | 150 | 0.94764 | -0.19190 | 0.75574 | 3.894 | 20.03 |  | 160 | 1.71943 | -0.14243 | 1.57700 | 8.126 | 9.60 |  | 170 | 2.25051 | -0.07579 | 2.17472 | 11.206 | 6.96 | 管底 | 180 | 2.43975 | 0.00000 | 2.43975 | Max 12.572 | 6.20 |
| 鉛直断面の位置<br>X (°)  | 曲げモーメント (kN・m/m)          |  |                        | 地震時の線荷重<br>P <sub>H</sub><br>(kN/m) | 地震時の安全率<br>S |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 常時荷重分<br>M'(X)            | 地震時付加分<br>M(X)   | 地震時合計<br>M'(X)+M(X)    |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管頂                | 0                         | 2.15951  | 0.00000                | 2.15951                             | 11.128       | 7.01    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 10                        | 2.00097  | 0.07578                | 2.07675                             | 10.702       | 7.29    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 20                        | 1.55678  | 0.14243                | 1.69921                             | 8.756        | 8.91    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 30                        | 0.91335  | 0.19190                | 1.10525                             | 5.695        | 13.70   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 40                        | 0.18975  | 0.21822                | 0.40797                             | 2.102        | 37.10   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 50                        | -0.49252   | 0.21822                | -0.27430                            | -1.413       | 55.18   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 60                        | -1.03990   | 0.19189                | -0.84800                            | -4.370       | 17.85   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 70                        | -1.40902   | 0.14243                | -1.26659                            | -6.527       | 11.95   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 80                        | -1.61538   | 0.07579                | -1.53959                            | -7.934       | 9.83    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管側                | 90                        | -1.72556   | 0.00000                | -1.72556                            | -8.892       | 8.77    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 100                       | -1.79832   | -0.07579               | -1.87410                            | -9.657       | 8.08    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 110                       | -1.73734   | -0.14243               | -1.87977                            | -9.687       | 8.05    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 120                       | -1.39282   | -0.19190               | -1.58472                            | -8.166       | 9.55    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 130                       | -0.74399   | -0.21822               | -0.96221                            | -4.958       | 15.73   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 140                       | 0.07689  | -0.21822               | -0.14133                            | -0.728       | 107.10  |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 150                       | 0.94764  | -0.19190               | 0.75574                             | 3.894        | 20.03   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 160                       | 1.71943  | -0.14243               | 1.57700                             | 8.126        | 9.60    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 170                       | 2.25051  | -0.07579               | 2.17472                             | 11.206       | 6.96    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管底                | 180                       | 2.43975  | 0.00000                | 2.43975                             | Max 12.572   | 6.20    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 鉛直断面の位置<br>X (°)  | 曲げモーメント (kN・m/m)          |  |                        | 地震時の線荷重<br>P <sub>H</sub><br>(kN/m) | 地震時の安全率<br>S |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 常時荷重分<br>M'(X)            | 地震時付加分<br>M(X)   | 地震時合計<br>M'(X)+M(X)    |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管頂                | 0                         | 2.15951  | 0.00000                | 2.15951                             | 11.128       | 7.01    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 10                        | 2.00097  | 0.07578                | 2.07675                             | 10.702       | 7.29    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 20                        | 1.55678  | 0.14243                | 1.69921                             | 8.757        | 8.91    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 30                        | 0.91335  | 0.19190                | 1.10525                             | 5.696        | 13.70   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 40                        | 0.18975  | 0.21822                | 0.40797                             | 2.103        | 37.10   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 50                        | -0.49252   | 0.21822                | -0.27430                            | -1.413       | 55.18   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 60                        | -1.03990   | 0.19189                | -0.84800                            | -4.369       | 17.85   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 70                        | -1.40902   | 0.14243                | -1.26659                            | -6.526       | 11.95   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 80                        | -1.61538   | 0.07579                | -1.53959                            | -7.933       | 9.83    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管側                | 90                        | -1.72556   | 0.00000                | -1.72556                            | -8.892       | 8.77    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 100                       | -1.79832   | -0.07579               | -1.87410                            | -9.658       | 8.08    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 110                       | -1.73734   | -0.14243               | -1.87977                            | -9.687       | 8.05    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 120                       | -1.39282   | -0.19190               | -1.58472                            | -8.167       | 9.55    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 130                       | -0.74399   | -0.21822               | -0.96221                            | -4.959       | 15.73   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 140                       | 0.07689  | -0.21822               | -0.14133                            | -0.729       | 107.10  |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 150                       | 0.94764  | -0.19190               | 0.75574                             | 3.894        | 20.03   |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 160                       | 1.71943  | -0.14243               | 1.57700                             | 8.126        | 9.60    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 170                       | 2.25051  | -0.07579               | 2.17472                             | 11.206       | 6.96    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管底                | 180                       | 2.43975  | 0.00000                | 2.43975                             | Max 12.572   | 6.20    |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 75                | 表2-12                     | <table border="1"> <thead> <tr> <th colspan="2">計 算 結 果</th> <th colspan="2">管の許容値</th> </tr> </thead> <tbody> <tr> <td rowspan="4">マンホールと<br/>管きよの接続部</td> <td>地震動による屈曲角</td> <td>0° 10' 12"</td> <td>2° 30' 00"<br/>(許容曲げ角度)</td> </tr> <tr> <td>地震動による拔出し量</td> <td>16.82mm</td> <td rowspan="3">105mm<br/>(拔出し余裕量)</td> </tr> <tr> <td>液状化地盤における<br/>永久ひずみによる拔出し量</td> <td>60mm</td> </tr> <tr> <td>地盤の硬軟急変化部での<br/>拔出し量</td> <td>20mm</td> </tr> <tr> <td rowspan="6">管きよと管きよ<br/>の継手部</td> <td>地震動による屈曲角</td> <td>0° 11' 56"</td> <td>2° 30' 00"<br/>(許容曲げ角度)</td> </tr> <tr> <td>地震動による拔出し量</td> <td>16.82mm</td> <td rowspan="3">105mm<br/>(拔出し余裕量)</td> </tr> <tr> <td>液状化地盤における<br/>永久ひずみによる拔出し量</td> <td>60mm</td> </tr> <tr> <td>地盤の液状化に伴う地盤の<br/>沈下による拔出し量</td> <td>29mm</td> </tr> <tr> <td>地盤の液状化に伴う地盤の<br/>沈下による屈曲角</td> <td>0° 7' 16"</td> <td>2° 30' 00"<br/>(許容曲げ角度)</td> </tr> <tr> <td>地盤の硬軟急変化部での<br/>拔出し量</td> <td>20mm</td> <td 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|                   | 地震動による拔出し量                | 16.82mm  | 105mm<br>(拔出し余裕量)      |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 液状化地盤における<br>永久ひずみによる拔出し量 | 60mm   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地盤の硬軟急変化部での<br>拔出し量       | 20mm   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管きよと管きよ<br>の継手部   | 地震動による屈曲角                 | 0° 11' 56"   | 2° 30' 00"<br>(許容曲げ角度) |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地震動による拔出し量                | 16.82mm  | 105mm<br>(拔出し余裕量)      |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 液状化地盤における<br>永久ひずみによる拔出し量 | 60mm   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地盤の液状化に伴う地盤の<br>沈下による拔出し量 | 29mm   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地盤の液状化に伴う地盤の<br>沈下による屈曲角  | 0° 7' 16"  | 2° 30' 00"<br>(許容曲げ角度) |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地盤の硬軟急変化部での<br>拔出し量       | 20mm   | 105mm<br>(拔出し余裕量)      |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 浅層不整形地盤での<br>拔出し量 | 20.66mm                   |  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管 本 体             | 周方向鉛直断面における<br>最大線荷重      | 21.014kN/m   | 2以上                    |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 安全率                       | 5.09   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 計 算 結 果           |                           | 管の許容値  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| マンホールと<br>管きよの接続部 | 地震動による屈曲角                 | 0° 10' 12"   | 2° 50' 00"<br>(許容曲げ角度) |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地震動による拔出し量                | 16.82mm  | 105mm<br>(拔出し余裕量)      |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 液状化地盤における<br>永久ひずみによる拔出し量 | 60mm   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地盤の硬軟急変化部での<br>拔出し量       | 20mm   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管きよと管きよ<br>の継手部   | 地震動による屈曲角                 | 0° 11' 56"   | 2° 50' 00"<br>(許容曲げ角度) |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地震動による拔出し量                | 16.82mm  | 105mm<br>(拔出し余裕量)      |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 液状化地盤における<br>永久ひずみによる拔出し量 | 60mm   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地盤の液状化に伴う地盤の<br>沈下による拔出し量 | 0.29mm   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地盤の液状化に伴う地盤の<br>沈下による屈曲角  | 0° 7' 16"  | 2° 50' 00"<br>(許容曲げ角度) |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 地盤の硬軟急変化部での<br>拔出し量       | 20mm   | 105mm<br>(拔出し余裕量)      |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 浅層不整形地盤での<br>拔出し量 | 20.66mm                   |  |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
| 管 本 体             | 周方向鉛直断面における<br>最大線荷重      | 21.014kN/m   | 2以上                    |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |
|                   | 安全率                       | 5.09   |                        |                                     |              |         |  |   |                  |                   |           |                                     |                        |                |                |                     |                           |      |                     |         |                 |           |            |                        |            |         |                   |                           |        |                           |      |                          |           |                        |                     |         |                   |                   |         |         |                      |            |       |         |      |   |         |         |         |         |       |       |    |                   |           |            |                        |            |         |                   |                           |         |                     |          |                 |           |            |                        |            |          |                   |                           |      |                           |          |                          |           |                        |                     |          |                   |                   |         |          |                      |            |     |     |          |   |          |        |      |         |     |   |          |          |        |      |  |     |          |          |          |        |      |         |     |          |          |          |        |       |    |         |         |          |          |         |        |  |     |         |          |         |       |         |  |     |         |          |         |       |      |         |     |         |          |         |        |      |     |          |         |         |         |            |      |  |     |          |  |  |     |                  |                  |  |     |                                     |              |                |                |                     |    |   |         |          |         |        |      |          |    |         |         |         |        |      |  |    |         |         |         |       |      |  |    |         |         |         |       |       |  |    |         |         |         |       |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |       |  |    |          |         |          |        |      |    |    |          |         |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |      |  |     |          |          |          |        |       |  |     |         |          |          |        |        |  |     |         |          |         |       |       |  |     |         |          |         |       |      |  |     |         |          |         |        |      |    |     |         |         |         |            |      |

| 訂正箇所                 |            | 誤                 |                          |                        | 正                      |                          |                          |                               |                               |
|----------------------|------------|-------------------|--------------------------|------------------------|------------------------|--------------------------|--------------------------|-------------------------------|-------------------------------|
| 頁                    | 行位置        | 誤                 |                          |                        | 正                      |                          |                          |                               |                               |
| 76                   | 表2-13      | 計 算 結 果           |                          |                        | 管の許容値                  |                          |                          |                               |                               |
|                      |            | マンホールと<br>管きよの接続部 | 地震動による屈曲角                | 0° 10' 12"             | 2° 30' 00"<br>(許容曲げ角度) | マンホールと<br>管きよの接続部        | 地震動による屈曲角                | 0° 10' 12"                    | <u>2° 50' 00"</u><br>(許容曲げ角度) |
|                      |            |                   | 地震動による拔出量                | 16.82mm                | 105mm<br>(拔出し余裕量)      |                          | 地震動による拔出量                | <u>17.48mm</u>                | 105mm<br>(拔出し余裕量)             |
|                      |            |                   | 液状化地盤における<br>永久ひずみによる拔出量 | 60mm                   |                        |                          | 液状化地盤における<br>永久ひずみによる拔出量 | 60mm                          |                               |
|                      |            |                   | 地盤の硬軟急変化部での<br>拔出量       | 20mm                   |                        |                          | 地盤の硬軟急変化部での<br>拔出量       | 20mm                          |                               |
|                      |            | 地震動による屈曲角         | 0° 11' 56"               | 2° 30' 00"<br>(許容曲げ角度) |                        | 地震動による屈曲角                | <u>0° 12' 24"</u>        | <u>2° 50' 00"</u><br>(許容曲げ角度) |                               |
|                      |            | 管きよと管きよ<br>の継手部   | 地震動による拔出量                | 16.82mm                | 105mm<br>(拔出し余裕量)      | 地震動による拔出量                | <u>17.48mm</u>           | 105mm<br>(拔出し余裕量)             |                               |
|                      |            |                   | 液状化地盤における<br>永久ひずみによる拔出量 | 60mm                   |                        | 液状化地盤における<br>永久ひずみによる拔出量 | 60mm                     |                               |                               |
|                      |            |                   | 地盤の液状化に伴う<br>地盤の沈下による拔出量 | 29mm                   |                        | 地盤の液状化に伴う<br>地盤の沈下による拔出量 | <u>0.29mm</u>            |                               |                               |
|                      |            |                   | 地盤の液状化に伴う<br>地盤の沈下による屈曲角 | 0° 7' 16"              |                        | 2° 30' 00"<br>(許容曲げ角度)   | 地盤の液状化に伴う<br>地盤の沈下による屈曲角 |                               | 0° 7' 16"                     |
|                      |            |                   | 地盤の硬軟急変化部での<br>拔出量       | 20mm                   | 105mm<br>(拔出し余裕量)      | 地盤の硬軟急変化部での<br>拔出量       | 20mm                     | 105mm<br>(拔出し余裕量)             |                               |
|                      |            |                   | 浅層不整形地盤での<br>拔出量         | 20.66mm                |                        | 浅層不整形地盤での<br>拔出量         | <u>21.20mm</u>           |                               |                               |
| 周方向鉛直断面における<br>最大線荷重 | 12.572kN/m |                   | 周方向鉛直断面における<br>最大線荷重     | 12.572kN/m             |                        |                          |                          |                               |                               |
| 管 本 体                | 安全率        | 5.11              | 2 以上                     | 管 本 体                  | 安全率                    | <u>6.20</u>              | 2 以上                     |                               |                               |