1. On pages 36, 40, 43, 47, and 48, replace the definition for the notation $K$ with the following:

\[ K = \tan(45^\circ - \phi') = \text{Rankine's active lateral pressure coefficient} \]
\[ = \text{ratio of active lateral pressure to vertical pressure} \]
\[ \text{where } \phi' = \text{friction angle of soil} \]

2. On page 48, replace the definition for the notation $c$ with:

\[ c = \text{cohesion intercept of soil, lb/ft}^2 \]

3. On page 49, the table heading for Table 5-2 should read "Design values of cohesion intercept."

4. On page 103, Eq 8-5 should read:

\[ EI = \frac{1}{12} E_t t_t^3 + E_s t_s + \frac{1}{12} E_r t_r^3 \]

Below Eq 8-5 and under “Where” delete the definition of $I_s$ and add the definition of $t_s$ as follows:

\[ t_s = \text{steel cylinder thickness, in.} \]

Below Eq 8-5 and below the definitions, delete the paragraph within this same section that begins “For unreinforced steel cylinders, $I_s$ would be equal . . .”

5. On page 108, Eq 8-12, replace $d_{yo}$ with $d_{yi}$. The equation should read:

\[ A_1 = \frac{d_{yi} + 2T_y}{\sin \Delta} (t_y - t_r) \]
Below the equation and under “Where” replace the definition of $d_yo$ with the definition of $d_yi$ as follows:

$$d_{yi} = \text{branch cylinder inside diameter, in.}$$

Below the equation Eq 8-14 and under “Where” add the definition of $d_yo$ under the definition of $w$ by adding “where $d_{yo} = \text{branch cylinder outside diameter, in.}”

6. On page 109, in Figure 8-10, diagram (A), replace the dimension $d_{yo} + 2Ty + \frac{d_{yo} + 2Ty}{2 \sin \Delta}$ with $d_{yi} + 2Ty$.

7. On pages 130, 142, and 152, the equation Eq 9-5B should read:

$$W_e = \gamma \left[ \frac{D_h H}{12} + \frac{1}{12} \left( \frac{D_o^2}{4} \right) \right]$$

8. On page 132, at the top of the page, “$D_o = \text{pipe outside diameter, ft’}” should read

“$D_o = \text{pipe outside diameter, in.”}”

9. On page 133, in Fig. 9-10, reverse the direction of the moment arrow for $M_o$ acting on the upper portion of the free-body diagram.

10. On page 135, in the first paragraph below Eq 9-11A, in the third line replace $e^{\lambda x}$ with $e^{-\lambda x}$ so that the equation reads:

$$M = \frac{V_o}{2\lambda} \left[ e^{-\lambda x} (\cos \lambda x - \sin \lambda x) \right]$$

11. On page 136, in Table 9-1, for Soil Type IV, under the column for Soil Properties change the coefficient of friction between pipe and soil from $\mu = 0.5$ to $\mu = 0.4$.

12. On page 140, in the second paragraph under the section on “Effects of Temperature and Poisson’s Ratio,” the second sentence should read: “They do affect the stresses away from the bend; however, a linear reduction in required cylinder thickness is sufficiently conservative to account for the stresses in the pipe wall due to temperature and Poisson’s ratio effects (Zarghamee et al. 2004).”

13. On page 141, at the top of the page, correct the expression to read as follows:

$$\text{Dead weight resistance per foot of pipe} = (W_p + W_f + W_e) \cos (\alpha - \frac{\Delta}{2})$$

14. On page 141, correct the current Eq 9-14 to read as follows:

$$L_{jt} = \frac{PA \sin \frac{\Delta}{2}}{(W_p + W_f + W_e) \cos (\alpha - \frac{\Delta}{2})}$$

Change the equation number Eq 9-14 to Eq 9-12, and change Eq 9-15 to Eq 9-13. Change all text that references Eq 9-15 to Eq 9-13. (These are: page 145 last paragraph, page 150 last paragraph, and page 165 middle of the page in paragraph addressing $F_j$.)
15. On page 143, Table 9-2, first column, under Bend Conditions, change “Bend length, \( l_{\nu}, \text{ in.} \)” to “Half bend length, \( l_{\nu}, \text{ in.} \).”

16. On page 147, the equation under “Weight of soil above pipe:” should read as follows:

\[
W_e = \gamma \left[ \frac{D_H H}{12} + \left( 1 - \frac{\pi}{4} \right) \frac{D_o^2}{12 \times 2} \right]
\]

17. On page 148: under step #5 and under “Where:” make the following corrections:

- In the first line where the notation \( a \) is defined, delete \( \text{in. \ lb} \) at the end of the bracket.
- In the second line, delete \( \text{in. \ lb}^2 \) at the end of the bracket and add \( \text{lb \ in.} \) to the end of the line
  (i.e., \( 5.253 \times 10^5 \ \text{lb \ in.} \)).
- In the third line where the notation \( b \) is defined, delete \( \text{in. \ lb}^2 \) at the end of the bracket.
- In the fourth line, delete \( \text{in. \ lb}^2 \) at the end of the bracket and add \( \text{lb \ in.}^2 \) at the end of the line
  (i.e., \( 2.517 \times 10^{11} \ \text{lb \ in.}^2 \)).
- In the fifth line where the notation \( c \) is defined, delete \( \text{in. \ lb}^3 \) at the end of the bracket.
- In the sixth line, delete \( \text{in. \ lb}^3 \) at the end of the bracket and add \( \text{lb \ in.}^3 \) to the end of the seventh line
  (i.e., \( -1.683 \times 10^{17} \ \text{lb \ in.}^3 \)).