

Appendix XII

Material Properties of the Steel-Girder Bridge

Steel in the Plate Girders

$$E = 29,000 \text{ ksi}$$

$$G = 11,000 \text{ ksi}$$

$$\text{Poisson's Ratio} = 0.32$$

$$\text{Density} = 0.284 \text{ lb/in}^3$$

$$f_y = 50 \text{ ksi}$$

Steel not in the Plate Girders

$$E = 29,000 \text{ ksi}$$

$$G = 11,000 \text{ ksi}$$

$$\text{Poisson's Ratio} = 0.32$$

$$\text{Density} = 0.284 \text{ lb/in}^3$$

$$f_y = 36 \text{ ksi}$$

Concrete in the superstructure

$$f_c' = 4000 \text{ psi}$$

$$E = 3605 \text{ ksi}$$

$$\text{Poisson's Ratio} = 0.15$$

$$G = \frac{E}{2(1 + \nu)} = 1567 \text{ ksi}$$

$$\text{Density} = 150 \text{ lb/ft}^3$$

Concrete not in the Superstructure

$$f_c' = 3000 \text{ psi}$$

$$E = 3122 \text{ ksi}$$

$$\text{Poisson's Ratio} = 0.15$$

$$G = \frac{E}{2(1+\nu)} = 1357 \text{ ksi}$$

$$\text{Density} = 150 \text{ lb/ft}^3$$

Rigid Link

$$E = 29,000 \text{ ksi}$$

$$G = 11,000 \text{ ksi}$$

$$\text{Poisson's Ratio} = 0.32$$

$$\text{Density} = 0$$