

Table 3.23.1 (Cont.) Distribution of Wheel Loads in Longitudinal Beams for Calculation of Bending Moments in Interior Longitudinal Stringers

Kind of Floor	Bridge Designed for One Traffic Lane	Bridge Designed for Two or More Traffic Lanes	Range of Applicability ^j
Concrete:			
On Timber Stringers	S/6.0' If S exceeds 6' use footnote f.	S/5.0' If S exceeds 5' use footnote f.	N/A
On Steel I-Beam Stringers and Prestressed Concrete Girders; Concrete T-Beams ^e	$0.1 + \left(\frac{S}{4'}\right)^{0.4} \left(\frac{S}{L}\right)^{0.3} \left(\frac{K_A}{L t_s^3}\right)^{0.1}$ or: $0.1 + \left(\frac{S}{4'}\right)^{0.4} \left(\frac{S}{L}\right)^{0.3}$ If S exceeds 16' use footnote f.	$0.15 + \left(\frac{S}{3'}\right)^{0.6} \left(\frac{S}{L}\right)^{0.2} \left(\frac{K_A}{L t_s^3}\right)^{0.1}$ or: $0.15 + \left(\frac{S}{3'}\right)^{0.6} \left(\frac{S}{L}\right)^{0.2}$ If S exceeds 16' use footnote f. If $N_b < 4$ use footnote f.	$3'-6'' \leq S \leq 16'-0''$ $20' \leq L \leq 240'$ $4.5'' \leq t_s \leq 12.0''$ $10,000 \leq K_A \leq 7,000,000 \text{ in}^4$ $N_b \geq 4$
Prestressed and Reinforced Concrete Box Girders ^{g,h}	$\left(3 + \frac{S}{2.2'}\right) \left(\frac{1'}{L}\right)^{0.35} \left(\frac{1}{N_c}\right)^{0.45}$ If S exceeds 13' use footnote f. If $S \leq 7'$ use 7' to be conservative. If $L \leq 60'$ use L, but distribution factor will be more conservative.	$\frac{2.5}{N_c} - \frac{1}{N_L} + \frac{L}{800'} + \left(\frac{S}{9'}\right) \left(\frac{90'}{L}\right)^{0.25}$ If S exceeds 13' use footnote f. If $S \leq 7'$ use 7' to be conservative. If $L \leq 60'$ use L, but distribution factor will be more conservative.	$7' \leq S \leq 13'$ $60' \leq L \leq 240'$ $3 \leq N_c$
On Steel Box Girders	See Article 10.29.2. <i>10.39.2</i>		N/A
On Prestressed Concrete Spread Box Beams ^e	$2 \left(\frac{S}{5'}\right)^{0.35} \left[\left(\frac{S}{L}\right) \left(\frac{d}{L}\right)\right]^{0.25}$ If S exceeds 11'-6" use footnote f.	$\left(\frac{S}{2'}\right)^{0.6} \left[\left(\frac{S}{L}\right) \left(\frac{d}{L}\right)\right]^{0.125}$	$6' \leq S \leq 11'-6''$ $20' \leq L \leq 140'$ $1'-6'' \leq d \leq 5'-6''$ $N_b \geq 3$
Precast Box Beams Used in Multi-Beam Decks ^e	$k \left(\frac{b}{L}\right)^{0.5} \left(\frac{I}{J}\right)^{0.25}$ or $k \left(\frac{b}{L}\right)^{0.5}$	$\left(\frac{2b}{3'}\right)^{0.6} \left[\left(\frac{b}{L}\right) \left(\frac{1}{N_b}\right)\right]^{0.2} \left(\frac{I}{J}\right)^{0.06}$ or $\left(\frac{2b}{3'}\right)^{0.6} \left[\left(\frac{b}{L}\right) \left(\frac{1}{N_b}\right)\right]^{0.2}$	$3' \leq b \leq 5'$ $20' \leq L \leq 120'$ $5 \leq N_b \leq 20$ $25,000 \leq J \leq 610,000 \text{ in}^4$ $40,000 \leq I \leq 610,000 \text{ in}^4$
Precast Beam Other Than Box Beams Used in Multi-Beam Decks	See Article 3.23.2.7.		N/A
Steel Grid: (less than 4" thick) (4" or more)	S/4.5 S/6.0 If S exceeds 6' use footnote f.	S/4.0 S/5.0 If S exceeds 10.5' use footnote f.	
Steel Bridge Corrugated Plank ⁱ (2" min. depth)	S/5.5	S/4.5	

Note: Footnotes a through j are listed on page 2.