

**Sidewalk Design**  
AASHTO 17th Edition

C/C Spacing of Supports = 3.75 FT	Uniform Pedestrian Load = 85 LBS
Support Top Flange Width = 0 IN	Impact = 0%
Effective Span Length for Design = 3.75 FT	Continuity Factor = 1
Effective Span Length (S) shall be the distance between edges of top flange plus one-half of stringer top flange width. (AASHTO 3.24.1.2)	Allowable Steel Stress = 20 ksi
	Allowable Concrete Stress = 1.8 ksi
Dead Load Moment = 0.07527 Kip-Foot / Foot $W \cdot S^2 / 8 \cdot 0.8$ (IF Continuous Span) Acting on steel grid only	
Live Load Plus Impact Moment = 0.1494141 Kip-Foot / Foot $W \cdot S^2 / 8 \cdot 0.8$ (IF Continuous Span) Acting on composite steel/concrete deck	
<b>Maximum Stress Negative Moment</b>	
@ Bottom of Concrete = 0.289192 Ksi	OK Design Stress Okay AASHTO 8.15.2.1.1
@ Bottom of Grid = 2.837129 Ksi	OK Design Stress Okay AASHTO 10.32.1
@ Top of Grid = -10.7824 Ksi	OK Negative Number Indicates Tension
@ Form Pan = -1.7022 Ksi	OK *NA means no concrete figured in design
@ Cross Bar Weld = -10.7824 Ksi	OK
$M_{neg} \cdot 12 / (I_{Grid} \text{ Only Section Modulus for Negative Moment}) = M_{neg} \cdot 12 / (I_{Composite} \text{ Section Modulus for Negative Moment})$	
<b>Maximum Stress Positive Moment</b>	
Top of Concrete = 0.134864 Ksi	OK Design Stress Okay AASHTO 8.15.2.1.1
Bottom of Grid = -0.32883 Ksi	OK Design Stress Okay AASHTO 10.32.1
Top of Grid = 0.656864 Ksi	OK Negative Number Indicates Tension
Form Pan = -0.32883 Ksi	OK *NA means no concrete figured in design
Cross Bar Weld = 0.656864 Ksi	OK
$M_{pos} \cdot 12 / (I_{Grid} \text{ Only Section Modulus for Positive Moment}) = M_{pos} \cdot 12 / (I_{Composite} \text{ Section Modulus for Positive Moment})$	
<b>Deflection</b>	
Effective Width of Deck - E = 4.225 Feet	
E = (4 + 0.068) but not over 7' (AASHTO 3.24.3.2)	
Deflection of Grid under Load of Wet Concrete = 0.01724182 Inches	= L / 2,610 Simple Span
$(5 \cdot W \cdot S^4) / 384 \cdot E_c \cdot I$	
Deflection of Composite Grid Section under Live Load and Impact = 0.00294816 Inches	= L / 16,993 Simple Span
$(5 \cdot W \cdot S^4) / 384 \cdot E_c \cdot I$	

