

9.7.2 EMPIRICAL DESIGN

Recommended Deck Thickness

AASHTO TYPE 2

Girder Spacing Feet	ITD Slab Depth Inches	Min Overhang to center of girder w/continuous barrier Feet	Min Overhang to center of girder w/o continuous barrier Feet
5.0	8.00	2.00	3.33
5.5	8.00	2.00	3.33
6.0	8.00	2.00	3.33
6.5	8.00	2.00	3.33
7.0	8.00	2.00	3.33
7.5	8.00	2.00	3.33
8.0	8.00	2.00	3.33
8.5	8.00	2.00	3.33
9.0	8.00	2.00	3.33
9.5	8.50	2.13	3.54
10.0	8.50	2.13	3.54
10.5	8.50	2.13	3.54
11.0	9.00	2.25	3.75
11.5	9.00	2.25	3.75
12.0	9.50	2.38	3.96
12.5	9.50	2.38	3.96
13.0	9.50	2.38	3.96
13.5	10.00	2.50	4.17

AASHTO TYPE 3

Girder Spacing Feet	ITD Slab Depth Inches	Min Overhang to center of girder w/continuous barrier Feet	Min Overhang to center of girder w/o continuous barrier Feet
5.0	8.00	2.00	3.33
5.5	8.00	2.00	3.33
6.0	8.00	2.00	3.33
6.5	8.00	2.00	3.33
7.0	8.00	2.00	3.33
7.5	8.00	2.00	3.33
8.0	8.00	2.00	3.33
8.5	8.00	2.00	3.33
9.0	8.00	2.00	3.33
9.5	8.00	2.00	3.33
10.0	8.50	2.13	3.54
10.5	8.50	2.13	3.54
11.0	9.00	2.25	3.75
11.5	9.00	2.25	3.75
12.0	9.00	2.25	3.75
12.5	9.50	2.38	3.96
13.0	9.50	2.38	3.96
13.5	10.00	2.50	4.17

AASHTO TYPE 4

Girder Spacing Feet	ITD Slab Depth Inches	Min Overhang to center of girder w/continuous barrier Feet	Min Overhang to center of girder w/o continuous barrier Feet
5.0	8.00	2.00	3.33
5.5	8.00	2.00	3.33
6.0	8.00	2.00	3.33
6.5	8.00	2.00	3.33
7.0	8.00	2.00	3.33
7.5	8.00	2.00	3.33
8.0	8.00	2.00	3.33
8.5	8.00	2.00	3.33
9.0	8.00	2.00	3.33
9.5	8.00	2.00	3.33
10.0	8.50	2.13	3.54
10.5	8.50	2.13	3.54
11.0	8.50	2.13	3.54
11.5	9.00	2.25	3.75
12.0	9.00	2.25	3.75
12.5	9.50	2.38	3.96
13.0	9.50	2.38	3.96
13.5	9.50	2.38	3.96

BULB TEE w/37" Top Flange

Girder Spacing Feet	ITD Slab Depth Inches	Min Overhang to center of girder w/continuous barrier Feet	Min Overhang to center of girder w/o continuous barrier Feet
5.0	Deck can not be designed by the Empirical Design method		
5.5	Deck can not be designed by the Empirical Design method		
6.0	8.00	2.00	1.32
6.5	8.00	2.00	1.94
7.0	8.00	2.00	2.15
7.5	8.00	2.00	2.36
8.0	8.00	2.00	2.57
8.5	8.00	2.00	2.78
9.0	8.00	2.00	2.99
9.5	8.00	2.00	3.19
10.0	8.00	2.00	3.40
10.5	8.00	2.00	3.61
11.0	8.50	2.13	3.82
11.5	8.50	2.13	4.03
12.0	9.00	2.25	4.24
12.5	9.00	2.25	4.44
13.0	9.00	2.25	4.65
13.5	10.00	2.50	4.86

WF GIRDER

Girder Spacing Feet	ITD Slab Depth Inches	Min Overhang to center of girder w/continuous barrier Feet	Min Overhang to center of girder w/o continuous barrier Feet
5.0	Deck can not be designed by the Empirical Design method		
5.5	Deck can not be designed by the Empirical Design method		
6.0	Deck can not be designed by the Empirical Design method		
6.5	8.00	2.00	1.75
7.0	8.00	2.00	1.96
7.5	8.00	2.00	2.17
8.0	8.00	2.00	2.38
8.5	8.00	2.00	2.58
9.0	8.00	2.00	2.79
9.5	8.00	2.00	3.00
10.0	8.00	2.00	3.21
10.5	8.00	2.00	3.42
11.0	8.00	2.00	3.63
11.5	8.50	2.13	3.83
12.0	8.50	2.13	4.04
12.5	9.00	2.25	4.25
13.0	9.00	2.25	4.46
13.5	9.00	2.25	4.67

STEEL GIRDER W/12" TOP FLANGE

Girder Spacing Feet	ITD Slab Depth Inches	Min Overhang to center of girder w/continuous barrier Feet	Min Overhang to center of girder w/o continuous barrier Feet
5.00	8.00	2.00	3.33
5.50	8.00	2.00	3.33
6.00	8.00	2.00	3.33
6.50	8.00	2.00	3.33
7.00	8.00	2.00	3.33
7.50	8.00	2.00	3.33
8.00	8.00	2.00	3.33
8.50	8.00	2.00	3.33
9.00	8.00	2.00	3.33
9.50	8.50	2.13	3.54
10.00	8.50	2.13	3.54
10.50	9.00	2.25	3.75
11.00	9.00	2.25	3.75
11.50	9.00	2.25	3.75
12.00	9.50	2.38	3.96
12.50	9.50	2.38	3.96
13.00	10.00	2.50	4.17
13.50	10.00	2.50	4.17

STEEL GIRDER W/15" TOP FLANGE

Girder Spacing Feet	ITD Slab Depth Inches	Min Overhang to center of girder w/continuous barrier Feet	Min Overhang to center of girder w/o continuous barrier Feet
5.00	8.00	2.00	3.33
5.50	8.00	2.00	3.33
6.00	8.00	2.00	3.33
6.50	8.00	2.00	3.33
7.00	8.00	2.00	3.33
7.50	8.00	2.00	3.33
8.00	8.00	2.00	3.33
8.50	8.00	2.00	3.33
9.00	8.00	2.00	3.33
9.50	8.50	2.13	3.54
10.00	8.50	2.13	3.54
10.50	8.50	2.13	3.54
11.00	9.00	2.25	3.75
11.50	9.00	2.25	3.75
12.00	9.50	2.38	3.96
12.50	9.50	2.38	3.96
13.00	9.50	2.38	3.96
13.50	10.00	2.50	4.17

STEEL GIRDER W/18" TOP FLANGE

Girder Spacing Feet	ITD Slab Depth Inches	Min Overhang to center of girder w/continuous barrier Feet	Min Overhang to center of girder w/o continuous barrier Feet
5.00	8.00	2.00	3.33
5.50	8.00	2.00	3.33
6.00	8.00	2.00	3.33
6.50	8.00	2.00	3.33
7.00	8.00	2.00	3.33
7.50	8.00	2.00	3.33
8.00	8.00	2.00	3.33
8.50	8.00	2.00	3.33
9.00	8.00	2.00	3.33
9.50	8.50	2.13	3.54
10.00	8.50	2.13	3.54
10.50	8.50	2.13	3.54
11.00	9.00	2.25	3.75
11.50	9.00	2.25	3.75
12.00	9.50	2.38	3.96
12.50	9.50	2.38	3.96
13.00	9.50	2.38	3.96
13.50	10.00	2.50	4.17

STEEL GIRDER W/24" TOP FLANGE

Girder Spacing Feet	ITD Slab Depth Inches	Min Overhang to center of girder w/continuous barrier Feet	Min Overhang to center of girder w/o continuous barrier Feet
5.00	8.00	2.00	3.33
5.50	8.00	2.00	3.33
6.00	8.00	2.00	3.33
6.50	8.00	2.00	3.33
7.00	8.00	2.00	3.33
7.50	8.00	2.00	3.33
8.00	8.00	2.00	3.33
8.50	8.00	2.00	3.33
9.00	8.00	2.00	3.33
9.50	8.00	2.00	3.33
10.00	8.50	2.13	3.54
10.50	8.50	2.13	3.54
11.00	9.00	2.25	3.75
11.50	9.00	2.25	3.75
12.00	9.00	2.25	3.75
12.50	9.50	2.38	3.96
13.00	9.50	2.38	3.96
13.50	10.00	2.50	4.17

FOOTNOTES

¹ Section 9.7.2.4 Design Condition

² Section 9.7.2.4 Design Condition

³ Section 4.6.2.2.2b Interior Beams with Concrete Decks

⁴ Deck can not be designed by the Empirical Design method

⁵ Two-tube curb mounted rail is not a continuous barrier

Revisions:

Jun-13 Added WF girder table
Oct-17 Added footnote 5