

2.1—LADOTD DECK DESIGN TABLES, GIRDER TOP FLANGE \geq 48 INCHES

The tables in this section are developed for concrete cast-in-place deck supported by concrete girders with flange width \geq 48 inches.

These tables may be used in lieu of detailed analysis. The following assumptions and limitations are used in developing this table and must be considered when using the listed values.

- The equivalent strip method is used and all limit states are satisfied.
- Reinforcements shown are for interior regions of the deck only and cannot be applied to deck overhang and its adjacent regions of the deck that need to be designed for vehicle collision provisions in accordance with *AASHTO LRFD Bridge Design Specifications* (hereinafter referred to as "LRFD" in this chapter) *Section 13*, in addition to the wheel load.
- This table is applicable to decks supported on at least three girders. The maximum total overhang length from the center of exterior girder to the edge of deck shall equal to the smaller of 0.625 times the girder spacing and 6'-0". The minimum overhang length shall equal to 5 times deck thickness.
- Maximum live load moment from *LRFD Appendix A4 Table A4-1* is used. Design section for the negative moment is determined in accordance with *LRFD Section 4.6.2.1.6* assuming a 48 inch top flange width for the girder.
- Flexural moments due to dead load effects are assumed to be $M=c*w*L^2$, where w is the uniformly distributed load in kip/ft and L is the girder spacing. For positive flexural moment $c=0.08$; for negative flexural moment $c=0.10$.
- The compressive strength of concrete, $f'_c=4000$ psi. The yield strength of the reinforcing bars, $f_y=60$ ksi.
- The deck thickness shown includes 1/2" sacrificial thickness that was not included in the structural calculation, but considered in the dead load calculations.
- For overall deck thickness \geq 8 inches, the clear concrete cover at top and bottom of the slab equals to 2 1/2" inches (including 1/2" sacrificial thickness) and 1 1/2" inches, respectively. For overall deck thickness of 7 and 7 1/2 inch, the clear concrete cover equals to 2" (including 1/2" sacrificial thickness) and 1 1/2", respectively. Overall deck thickness less than 8 inches can only be used for movable bridge spans.
- The weight of the railing equals to 520.5 lb/ft (TL-5). The bottom width of the railing from the edge of the deck to the gutter line equals to 1'-8". The weight of railing is evenly distributed along the deck in transverse direction (perpendicular to traffic).
- Concrete density is 150 pcf.
- Stay-in-Place (SIP) steel form (foam filled) weight of 10 psf is included.
- Future wearing surface of 25 psf is included.
- The girder spacing is the distance between the centers of the girders.
- Minimum and maximum bar spacings are limited to 5 inches and 7 inches, respectively, with increments of 0.5 inch. This limitation applies to both transverse and longitudinal directions.
- Reinforcing bars are limited to #4, #5, and #6.