

9.7.1.5 DESIGN OF CANTILEVER SLABS

NCHRP-350 STANDARD RAILS

Bridge Section policy for the reinforcement of deck overhangs that support ITD 32" concrete parapet, 2 tube curb-mounted rail, and combination rail shall be the reinforcement for the empirical deck design requirements for the top mat (#5 rebar at 12") with the addition of #6 rebar spaced between the standard #5 bars. This reinforcement shall be considered adequate for those areas at least 8 feet from any joint or discontinuity in the parapet. For areas less than 8 feet from joints or discontinuities in the parapet two #6 bars shall be evenly spaced between the #5 bars. The length of the additional #6 rebar shall be such that the bar extends at least halfway between the exterior girder and the first interior girder. This policy only applies to 8 inch minimum thick decks with a minimum overhang of 24 inches from the centerline of the exterior girder to a maximum overhang of 72 inches.

MASH 42" SINGLE SLOPE CONCRETE PARAPET

Bridge Section policy for the reinforcement of deck overhangs that support ITD 42" single slope concrete parapet shall be the reinforcement for the empirical deck design requirements for the top mat (#5 rebar at 12") with the addition of 2 bundled #6 rebar spaced between the standard #5 bars. This reinforcement shall be considered adequate for entire length of the parapet including those areas at any joint or discontinuity in the parapet. The length of the additional #6 rebars shall be such that the bar extends at least halfway between the exterior girder and the first interior girder. This policy only applies to 8 inch minimum thick decks with a minimum overhang of 24 inches from the centerline of the exterior girder to a maximum overhang of 96 inches.

Commentary

The 42" single slope parapet was analyzed according to AASHTO Article A13.4 for TL-4 loads to insure the parapet would yield before the cantilever deck. An 8" cantilever deck with a top mat of transverse #5 bars @ 12" and 2-#6 bundled bars at 12" between the #5 bars ($A_s = 1.19$) would provide the moment capacity greater than the parapet for a TL-4 loading.

Revisions:

June 2013	Article was renumbered from A13.4.1
Mar 2015	Revised article for change to #5 top mat reinforcement for the empirical design.
May 2018	Added design criteria for NCHRP-350 rails and MASH rails. Revised commentary.