

9.7.2 EMPIRICAL DESIGN

Empirical deck design is the Bridge Section preference for the reinforcement of concrete decks. All the requirements of Article 9.7.2.4, Design Conditions, shall be satisfied.

The reinforcement requirements for the top mat shall be epoxy coated #5 rebar at 12" in both transverse and longitudinal mats. The reinforcement requirements for the bottom mat shall be uncoated #5 rebar at 12" in both transverse and longitudinal mats.

The lap length shall be 21" for the top mat epoxy coated #5 bars and a minimum 18" for the uncoated bottom mat #5 bars. To simplify the detailing, use a 21" lap for both the top and bottom mats.

Negative moment reinforcement over the pier shall be designed in accordance with ITD Bridge Design Manual Article 5.14.1.4.

Commentary

Article 9.7.2.5 for Reinforcement Requirements specifies a minimum top mat reinforcement of 0.18 in²/ft for each layer or #4 bars at 12" spacing (0.20 in²/ft). The bar size was increased to a #5 due to construction concerns, i.e. workers walking on the rebar mat during placement.

Revisions:

Mar 2015 Added new article.