

**LAKE COUNTY ENGINEER
SUPPLEMENT TO THE 2007 ODOT BRIDGE DESIGN MANUAL**

101 INTRODUCTION

The Lake County Engineer's (LCE) Bridge Design Standards generally follow the Ohio Department of Transportation's (ODOT) Bridge Design Manual (BDM), except as herein noted or as otherwise defined in the project Scope of Services, or as approved by the LCE in the course of project development.

For information regarding LCE design standards, CAD standards, general notes, standard drawings and revisions, please visit the Lake County Engineer's website at: www.lakecountyohio.gov/engineer

209.2 BRIDGE RAILINGS

Exceptions to these bridge railing design criteria may be made if the LCE directs the designer to pursue an aesthetic hand railing design either during the Scope of Services phase or during preliminary design of the project. In these instances, non-crash tested railings will be considered adequate so long as the design of the traffic railing component is structurally adequate based on the TL-2 or TL-3 loading conditions as defined in NCHRP Report No. 350 and the pedestrian railing component satisfies the requirements of the current AASHTO LRFD Bridge Design Specifications manual. In addition, the safety of the traveling public must not be compromised by any obvious flaws in the design of the railing. Refer to the LCE Standard Bridge Rail Drawing.

302.1.3 WEARING SURFACE

302.1.3.1 TYPES

All new County structures shall be designed with a 3" to 4" asphalt concrete wearing surface consistent with the intermediate and surface courses of the approach roadway, unless otherwise specified. This 3" to 4" thickness at the top of the concrete deck is not included as part of the ODOT BDM clear cover over the top layer of reinforcing steel, and it shall not be considered as contributing to the structural design of the deck slab or as part of the composite section.

302.1.4 CONCRETE DECK PROTECTION

302.1.4.1 TYPES

The County prefers the following types of concrete deck protection:

- A. Epoxy Coated Reinforcing Steel – CMS 709.00
- B. Type 3 Deck Membrane, as per plan

302.1.4.2 WHEN TO USE

Generally, all reinforcing steel shall be epoxy coated. The LCE will evaluate the use of other reinforcing steel on a project-by-project basis and, if warranted, its use will be defined either in the Scope of Services or during preliminary design.

Over-the-side drainage should generally be used for all County bridges.

In general, asphaltic concrete wearing surfaces should be used on County bridge structures.