

ACI 345.2R-13

Guide for Widening Highway Bridges

Reported by ACI Committee 345



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Guide for Widening Highway Bridges

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American Concrete Institute
38800 Country Club Drive
Farmington Hills, MI 48331
U.S.A.
Phone: 248-848-3700
Fax: 248-848-3701

www.concrete.org

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Guide for Widening Highway Bridges

Reported by ACI Committee 345

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Jeffrey P. Wouters

*Deceased.

†Subcommittee Chairs.

Many highway bridges become functionally obsolete due to inadequate width before they become structurally deficient. Widening is generally more economical than complete replacement. Thus, there is a mandate to share the results of research and experience pertaining to bridge widening. This guide discusses technical issues related to the widening of concrete bridges and bridges with concrete decks. The primary focus of this document is on bridge decks, even though substructure issues are raised and discussed. The effects of differential movements between the existing and new portions are discussed, including movements due to traffic on the existing structure during construction. General recommendations are made pertaining to the choice of structure type, design details, and construction methods and materials.

The materials, processes, quality-control measures, and inspections described in this document should be tested, monitored, or performed as applicable only by individuals holding the appropriate ACI certifications or equivalent.

Keywords: bridge decks; bridge widening; bridges (structures); concrete construction; deflection; formwork (construction); reinforced concrete; reinforcing steel; substructure; superstructure; traffic vibration.

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CHAPTER 1—INTRODUCTION AND SCOPE

1.1—Introduction

Design and construction engineers should investigate several potential issues if a bridge is to be considered for widening. These include retention of bridge elements, traffic control, structural constraints, economy and feasibility, expected increase in traffic volume, life span, and construc-

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