

## NDOT STRUCTURES MANUAL

## Published By: Nevada Department of Transportation Structures Division

Mark Elicegui, P.E., Chief Structures Engineer

Todd Stefonowicz, P.E., Assistant Chief Structures Engineer – Design

David Severns, P.E., Assistant Chief Structures Engineer –

Inventory/Inspection



September 2008

#### **FOREWORD**

The NDOT Structures Manual has been developed to provide bridge designers with NDOT's standard structural design policies and practices. Designers should attempt to meet all of the criteria presented in the Manual, while fulfilling NDOT's mission of providing a safe and efficient transportation system for the State. Designers must consider economic impacts, aesthetics, and the social and cultural resources of the project area and request exceptions to the Manual criteria when conditions warrant. Because it is impossible to address every issue that bridge designers will encounter, sound engineering judgment must be exercised when conditions arise that are not specifically covered in the Manual.

The *NDOT Structures Manual* has been prepared based on the 4<sup>th</sup> Edition of the AASHTO *LRFD Bridge Design Specifications*.

#### **ACKNOWLEDGEMENTS**

The *NDOT Structures Manual* was developed by the NDOT Structures Division with assistance from the consulting firm of Roy Jorgensen Associates, Inc., Professor Dennis Mertz of the University of Delaware, and the consulting firm of CH2M Hill, Inc.

#### **REVISION PROCESS**

The NDOT Structures Manual is intended to provide current structural design policies and procedures for use in developing NDOT projects. To ensure that the Manual remains up-to-date and appropriately reflects changes in NDOT's needs and requirements, its contents will be updated on an ongoing basis. It is the responsibility of the Manual holder to keep the Manual updated.

The NDOT Structures Division will be responsible for evaluating changes in the structural design literature (e.g., updates to the *LRFD Specifications*, the issuance of new research publications, revisions to Federal regulations) and will ensure that those changes are appropriately addressed through the issuance of revisions to the *Manual*. It is important that users of the *Manual* inform NDOT of any inconsistencies, errors, need for clarification, or new ideas to support the goal of providing the best and most up-to-date information practical. Comments and proposed revisions may be forwarded to the Chief Structures Engineer using the Revision Proposal Form.

#### NDOT Structures Manual

#### **Revision Proposal Form**

To propose a revision to the *NDOT Structures Manual*, complete and return this Revision Proposal Form to:

Chief Structures Engineer Nevada Department of Transportation 1263 S. Stewart Street Carson City, Nevada 89712

Fax: 775.888.7405

E-mail: info@dot.state.nv.us (include "Structures Manual" in subject line)

# Identification Date Submitted: Submitted By (name, agency/firm): Contact Information (phone #, e-mail): **<u>Description of Proposed Revision</u>** (attach additional sheets as necessary) Applicable Manual Section Number(s): Justification for Revision: \_\_\_\_\_ Proposed Revision: \_\_\_\_\_

### **TABLE OF CONTENTS**

#### Part I — Administration and Procedures

Chapter 1	NDOT ORGANIZATION
Chapter 2	ADMINISTRATIVE POLICIES AND PROCEDURES
	BRIDGE PROJECT DEVELOPMENT PROCESS
	BRIDGE DESIGN COORDINATION
	PLAN PREPARATION
	QUANTITY AND COST ESTIMATES
	STRUCTURAL DESIGN NOTEBOOK
	COMPUTER SOFTWARE
•	RESERVED
•	
Part II — Structural Desi	<u>gn</u>
Chapter 10	GENERAL
Chapter 11	PRELIMINARY DESIGN
Chapter 12	LOADS AND LOAD FACTORS
Chapter 13	STRUCTURAL ANALYSIS AND EVALUATION
	CONCRETE STRUCTURES
	STEEL STRUCTURES
Chapter 16	BRIDGE DECKS
	FOUNDATIONS
Chapter 18	SUBSTRUCTURES
	EXPANSION JOINTS
Chapter 20	BEARINGS
	RAILROADS
	BRIDGE REHABILITATION
	MISCELLANEOUS STRUCTURAL ELEMENTS
Chapter 24	RESERVED
Part III — Construction	
<u> </u>	
Chapter 25	CONSTRUCTION SUPPORT
	NON-DESTRUCTIVE TESTING
•	RESERVED
Part IV — Bridge Manag	<u>ement</u>
Chapter 28	NEVADA BRIDGE INSPECTION PROGRAM
	BRIDGE MANAGEMENT

#### **SUBJECT INDEX**

September 2008 i

ii September 2008