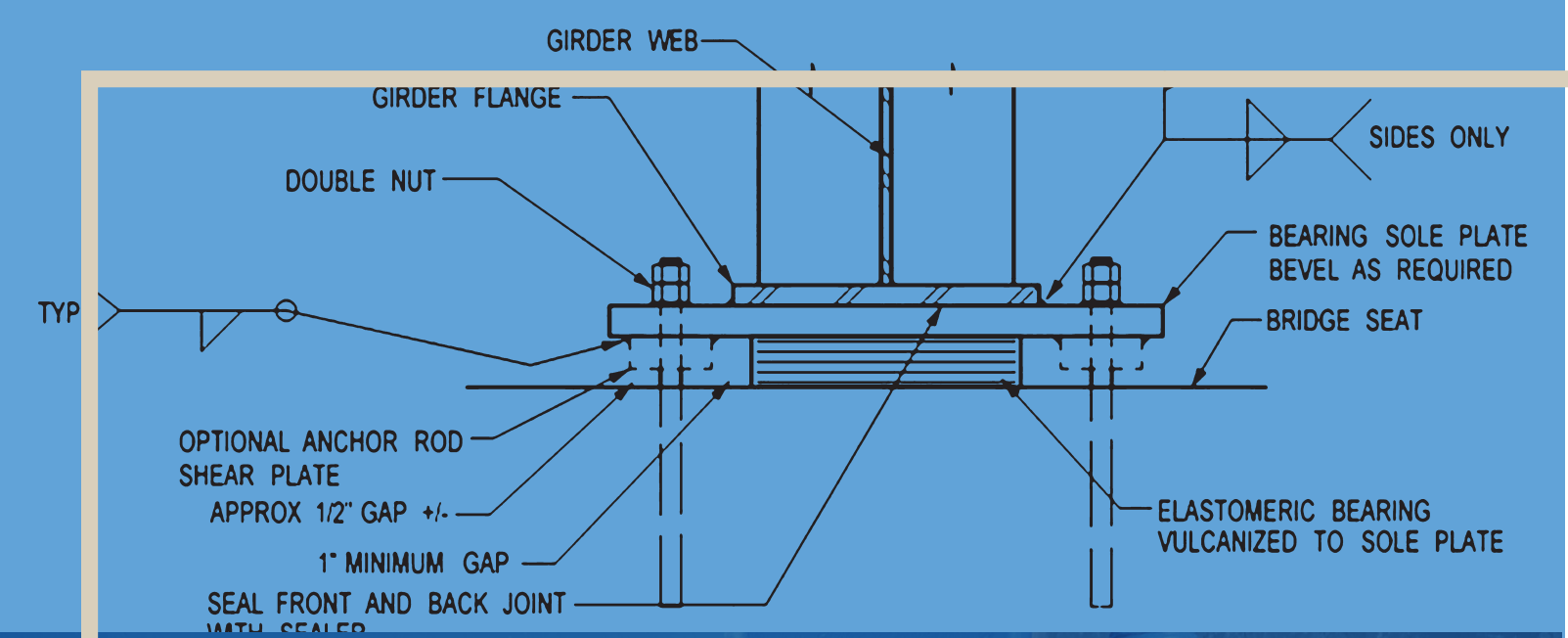

Steel Bridge Bearing Guidelines

G9.1—2022

American Association of State Highway and Transportation Officials

AASHTO

AASHTO/NSBA STEEL BRIDGE COLLABORATION

American Association of State Highway and Transportation Officials

National Steel Bridge Alliance

Steel Bridge Bearing Guidelines

Introduction

The purpose of these Guidelines is to present steel bridge bearing design guidelines and construction details that are cost-effective, functional, and durable. Four major types of bridge bearings are presented:

1. **Elastomeric Bearings**

   Section 1 primarily addresses steel-reinforced elastomeric pads; however, much of the content is directly applicable to fiberglass-reinforced, plain, and cotton duck pads as well.

2. **High Load Multi-Rotational (HLMR) Bearings**

   Section 2 addresses pot, disc, and spherical bearings.

3. **Steel Bearings**

   Bearings in Section 3 are limited to simple bearings made with steel plates used for fixed bearing lines, which are still considered by some bridge owners to be useful and effective.

4. **Seismic Isolation Bearings**

   Section 4 covers bearings used to reduce seismic forces in bridge substructures.

These bearing categories are sufficient to cover the vast majority of structures in the U.S. national bridge inventory. Special bridges may require different bearings.

These Guidelines are not intended as a stand-alone document and do not supersede the current editions of the *AASHTO LRFD Bridge Design Specifications* or the *LRFD Bridge Construction Specifications*.

This document contains many guidelines that are based on provisions of the *AASHTO LRFD Bridge Design Specifications* and *LRFD Bridge Construction Specifications*. Designers should note that changes made to these AASHTO specifications after the publication of this document may be in conflict with the guidelines contained herein. In this case, the provisions in the AASHTO specifications shall take precedence over the guidelines in this document.

These Guidelines do not supersede owner requirements for design and detailing of bearings. Owners may choose to adopt details from different bearing types for their owner standards (e.g., anchor rod details). Designers should obtain prior approval for the use of details and design recommendations included in these Guidelines that are not consistent with owner standards.

The layout of this document is similar to a typical two-column AASHTO bridge specification format. Guidelines are presented in the left column and commentary is provided in the right column. The commentary text is aligned vertically with the guideline text for easier reference, which explains spaces in the text in both columns. This format has proven to be useful for readers.

Abbreviated Table of Contents

The AASHTO/NSBA Steel Bridge Collaboration *G9.1—Steel Bridge Bearing Guidelines*, Second Edition contains the following sections and appendices:

TABLE OF CONTENTS

Section 2: Elastomeric Bearings

TABLE OF CONTENTS

TABLE OF CONTENTS

Section 4: Steel Bearings

TABLE OF CONTENTS

Section 5: Seismic Isolation Bearings

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS