#### **Annotation Guidelines**

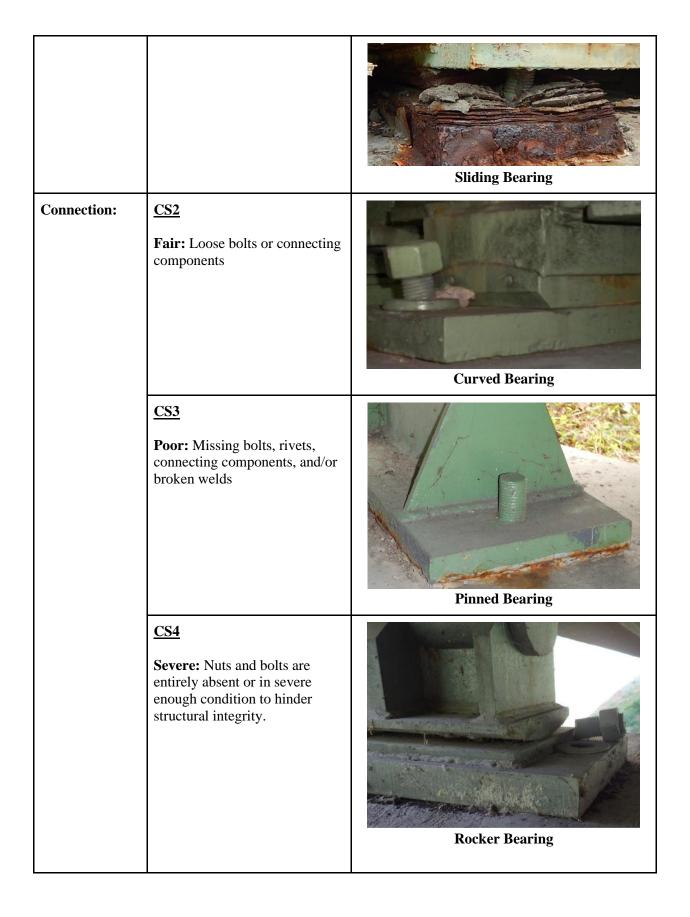
Author: Eric Bianchi

**Date last modified**: September 2021 **Notes:** Initial submission of guidelines

#### Note:

- The classification of bearings and the creation of the annotation guidelines were based on the guidance outlined in the Bridge Inspector's Reference Manual (BIRM) (Ryan, Mann, & Chill, 2012), and the American Association of State Highway and Transportation Officials (AASHTO) code (AASHTO, 2018).
- To CITE this annotation guideline please use the reference of the journal article titled "Development of Open-source Collaborative Structural Inspection Datasets".
- All defect types with a condition better than "Fair" condition state 2 (CS2) are considered "Good" condition state 1 (CS1).
- AASHTO. (2018). Manual for Bridge Element Inspection (1st Edition), with 2015 and 2018 Interim Revisions. American Association of State Highway and Transportation Officials (AASHTO).
- Ryan, T. W., Mann, J. E., & Chill, Z. M. (2012). FHWA Bridge Inspector's Reference Manual (BIRM) (Vol. 1). Retrieved from https://www.fhwa.dot.gov/bridge/nbis/pubs/nhi12049.pdf

Defect Description	Ratings	Images
Corrosion:	CS2 Fair: Freckled Rust, surface rust	Rocker Bearing
	CS3  Poor: Pack rust, deeper-thansurface-rust, some section loss but not enough to warrant structural review	Curved Bearing
	Severe: Excessive section loss and or is in a condition that can affect structural integrity	Rocker Bearing



		Unidentifiable Bearing
Movement	CS2  Fair: Minor restriction to moving components (debris, obstacles)	Sliding Bearing
	CS3  Poor: Clear restriction to movement but not extensive enough to warrant a structural review	Rocker Bearing

## <u>CS4</u>

**Severe:** Extensive restriction to movement (excessive debris and/or corrosion) that can affect structural integrity



Sliding Bearing



**Rocker Bearing** 

Alignment /
Bulging,
Splitting,
Tearing:
(Temperature
changes must be
taken into
account)

## **CS2**

**Fair:** Minor misalignment / bulging (no splitting or tearing) of bearing components



**Rocker Bearing** 



**Elastomeric Bearing** 



**Curved Bearing** 

## <u>CS3</u>

**Poor:** Misalignment is clearly evident but not severe enough to warrant a structural review / splitting or tearing is present



**Rocker Bearing** 



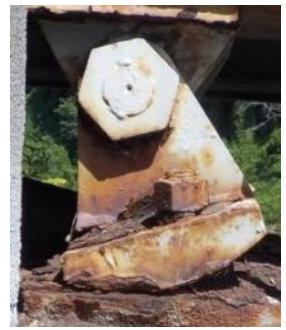
**Curved Bearing** 



# **Elastomeric Bearing**

## **CS4**

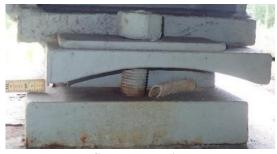
Severe: Significant misalignment or entire separation of bearing components



**Rocker Bearing** 



**Curved Bearing** 



**Curved Bearing** 

**Bearing Types Not Shown in Guidelines** 

Bearing Types Not Shown in Guidelines							
Bearing	Image						
Pot Bearing	(AASHTO, 2018)						
Roller Bearing	(AASHTO, 2018)						
	(AASHTO, 2018)						
<u>Fixed</u>							