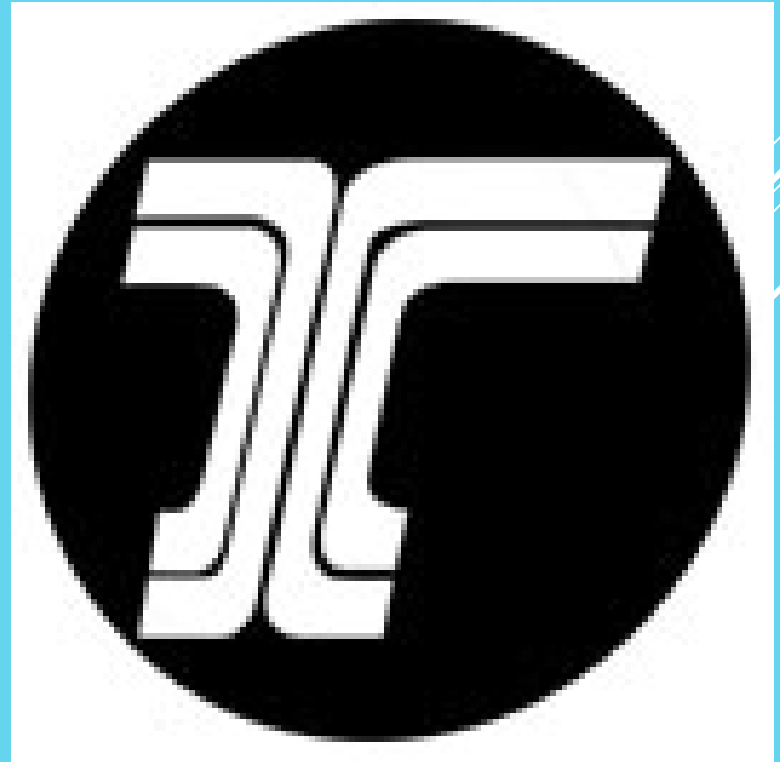


Oregon Highway Bridge Maintenance Workshop





Bearing Maintenance



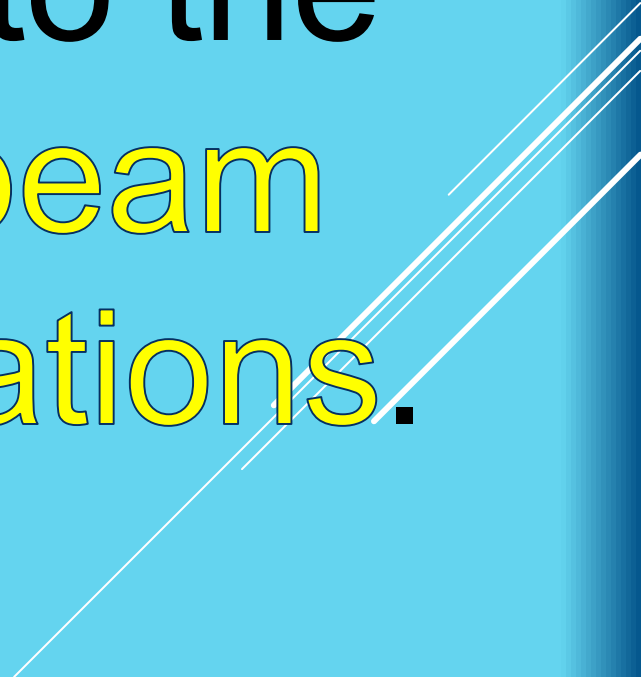


Bridge bearings transfer loads
from the superstructure to the
substructure

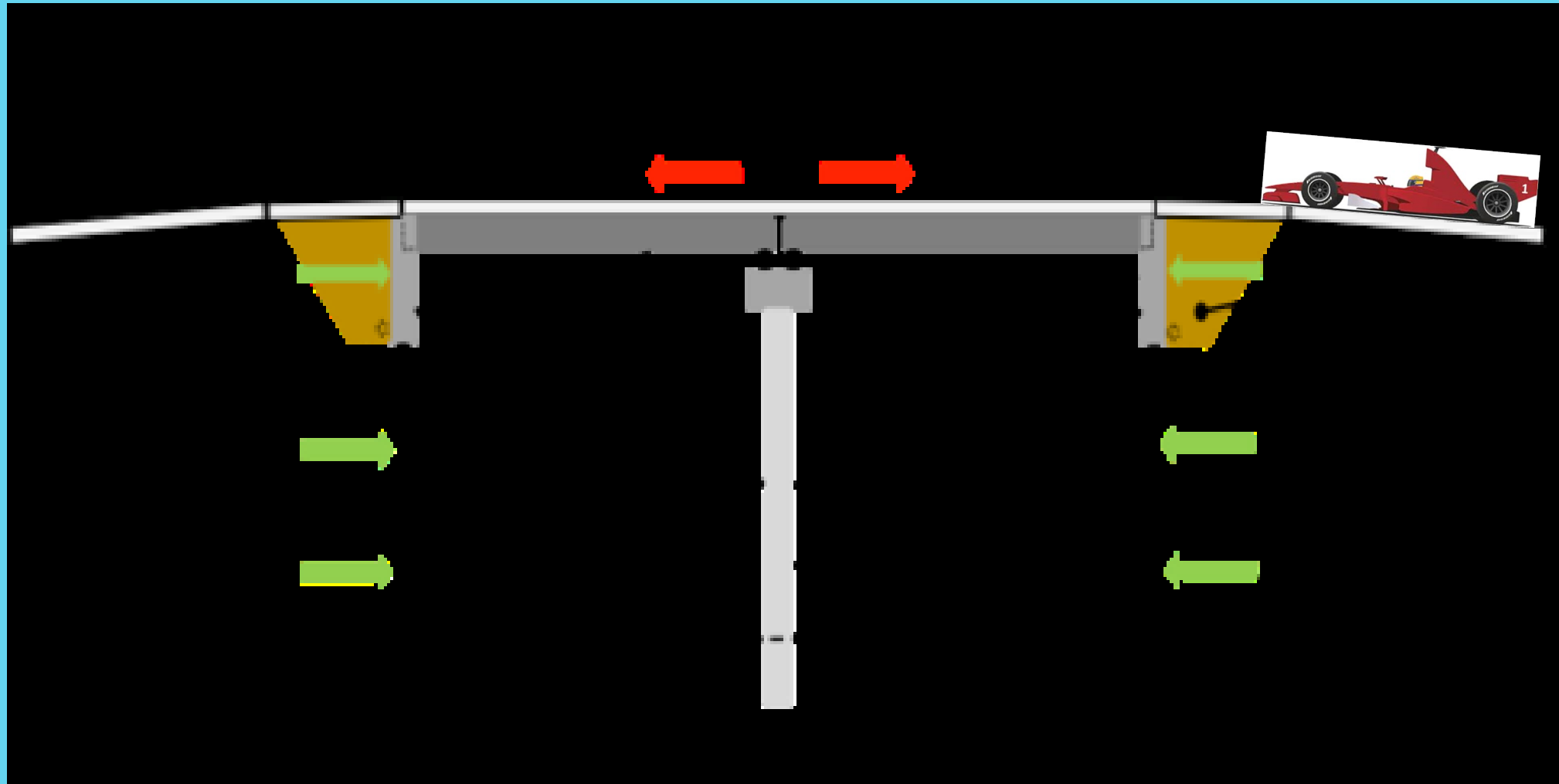




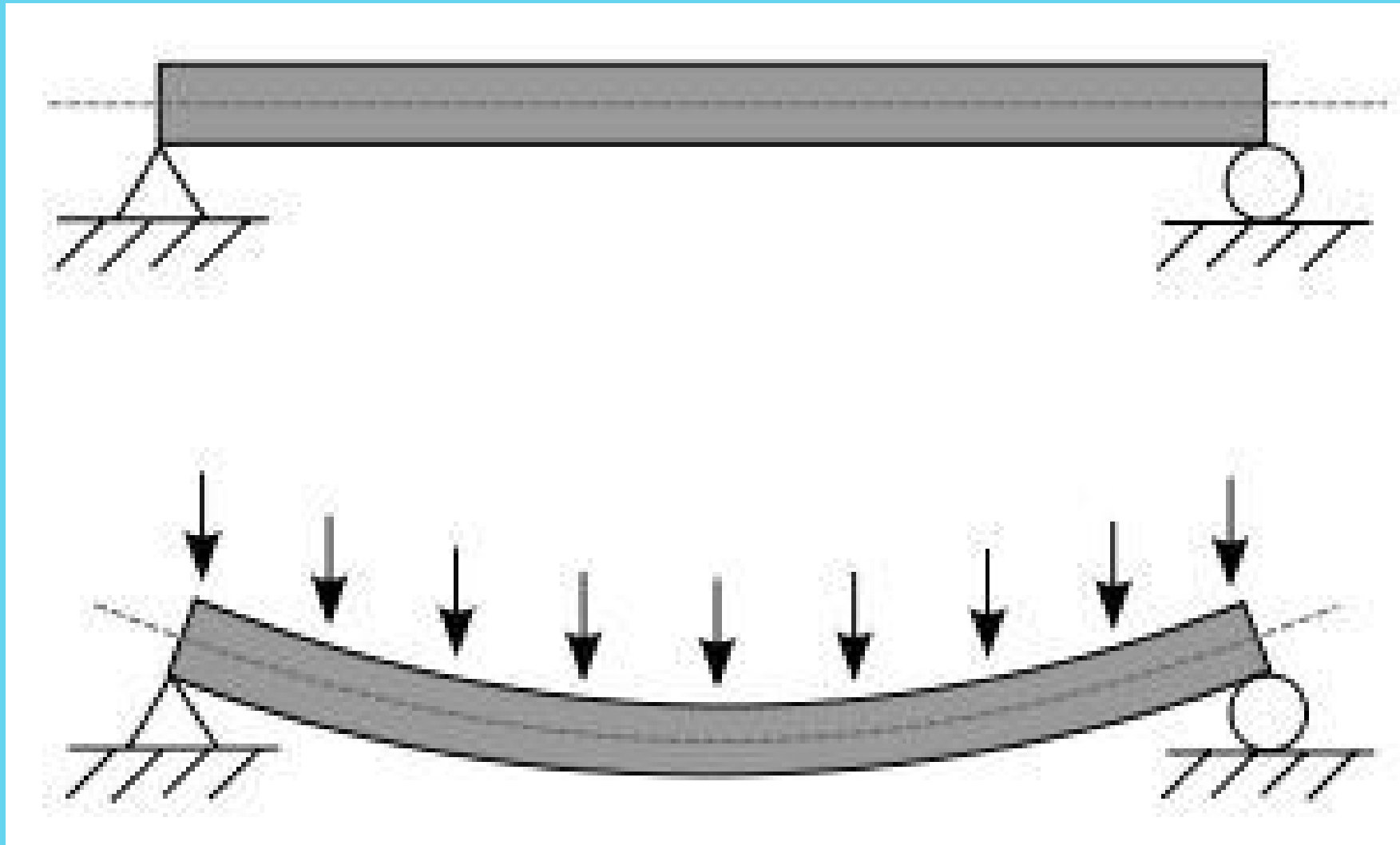
Bridge bearings transfer loads from the superstructure to the substructure and allow beam end translations and rotations.



Longitudinal End Translations (Horizontal Movement)



Beam End Rotation





There are two major categories of bridge bearings:

Those that allow for longitudinal translation





There are two major categories of bridge bearings:

Those that allow for longitudinal translation - expansion bearings





There are two major categories of bridge bearings:

Those that allow for longitudinal translation - expansion bearings

Those that do not allow longitudinal translation



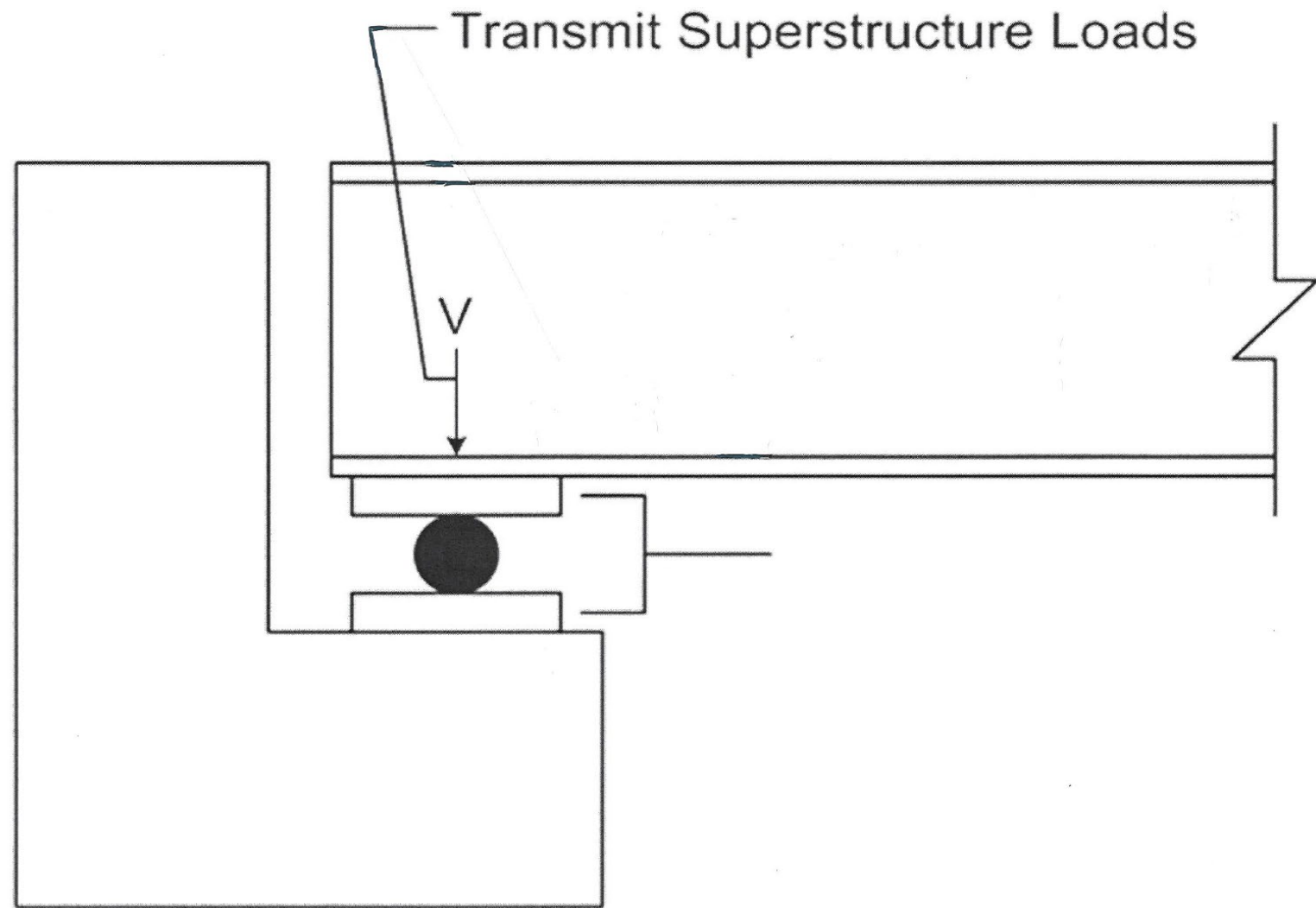


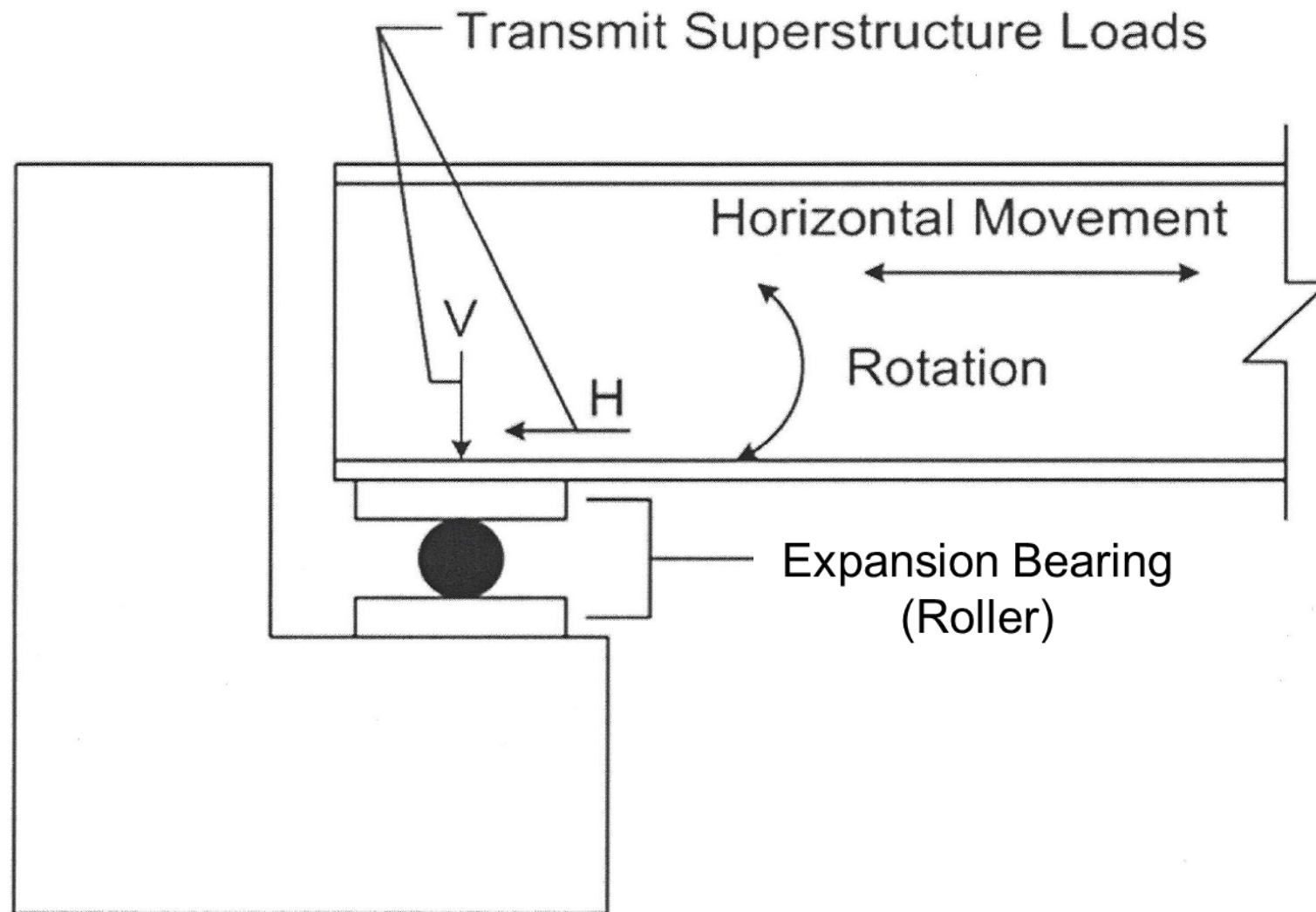
There are two major categories of bridge bearings:

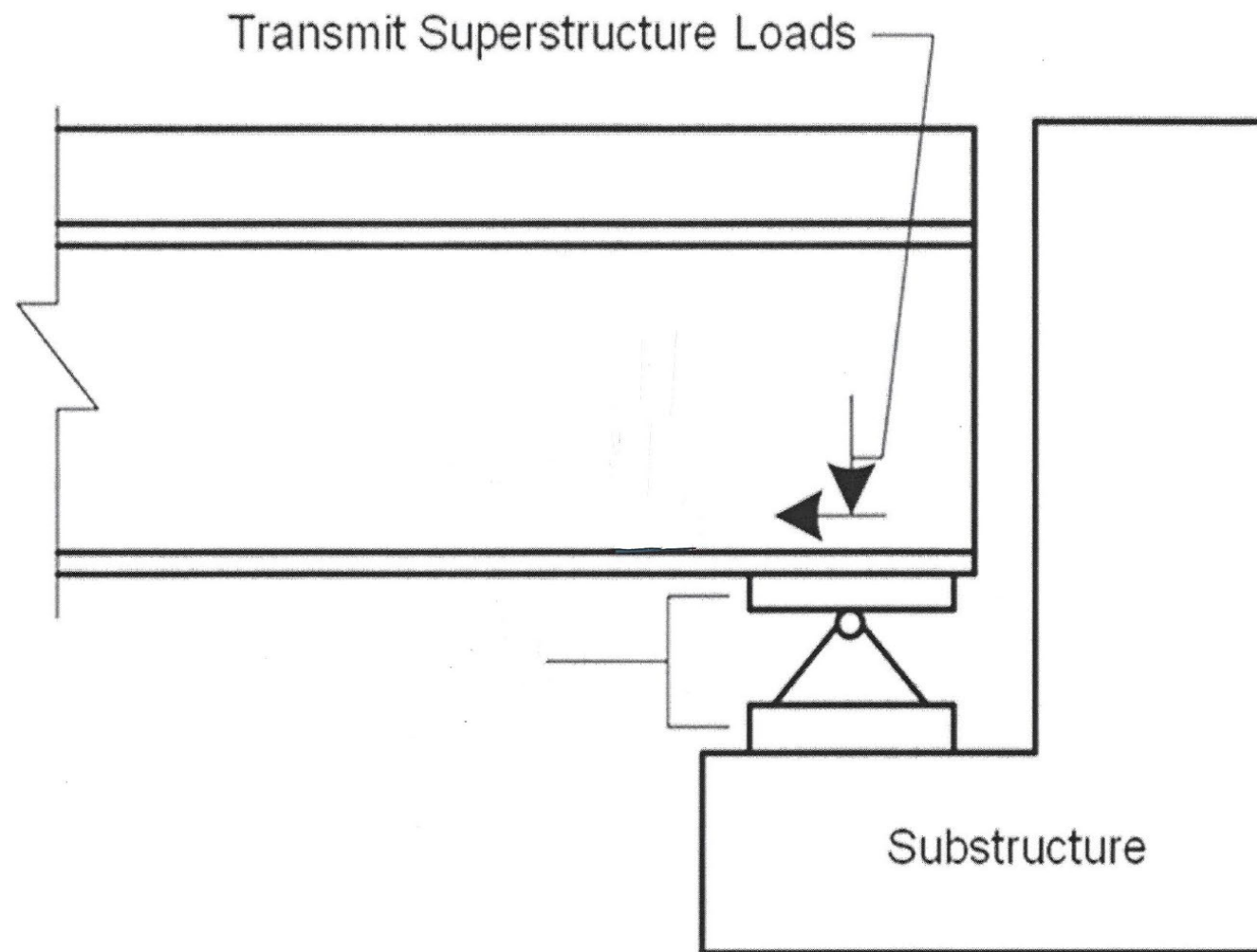
Those that allow for longitudinal translation - expansion bearings

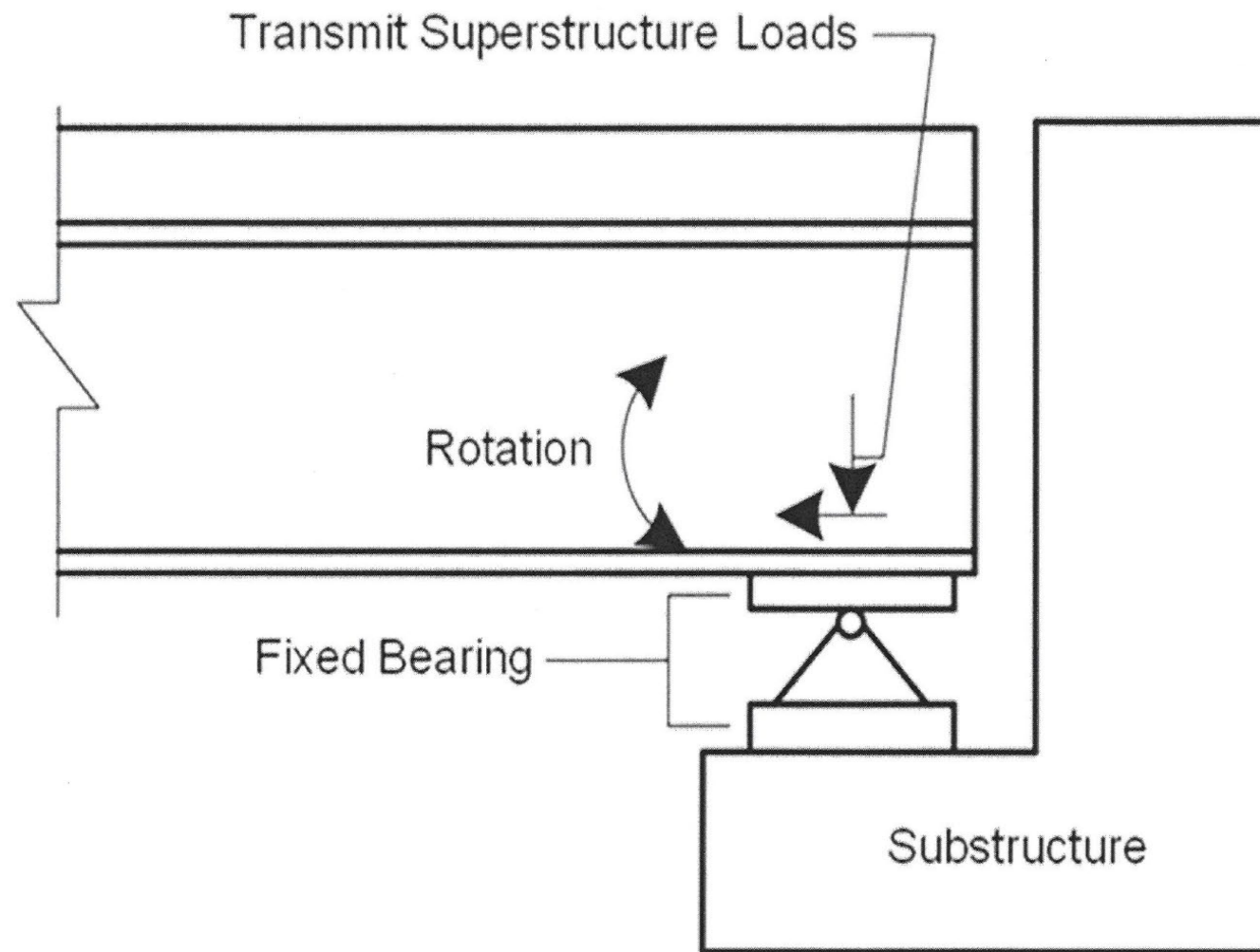
Those that do not allow longitudinal translation - fixed bearings

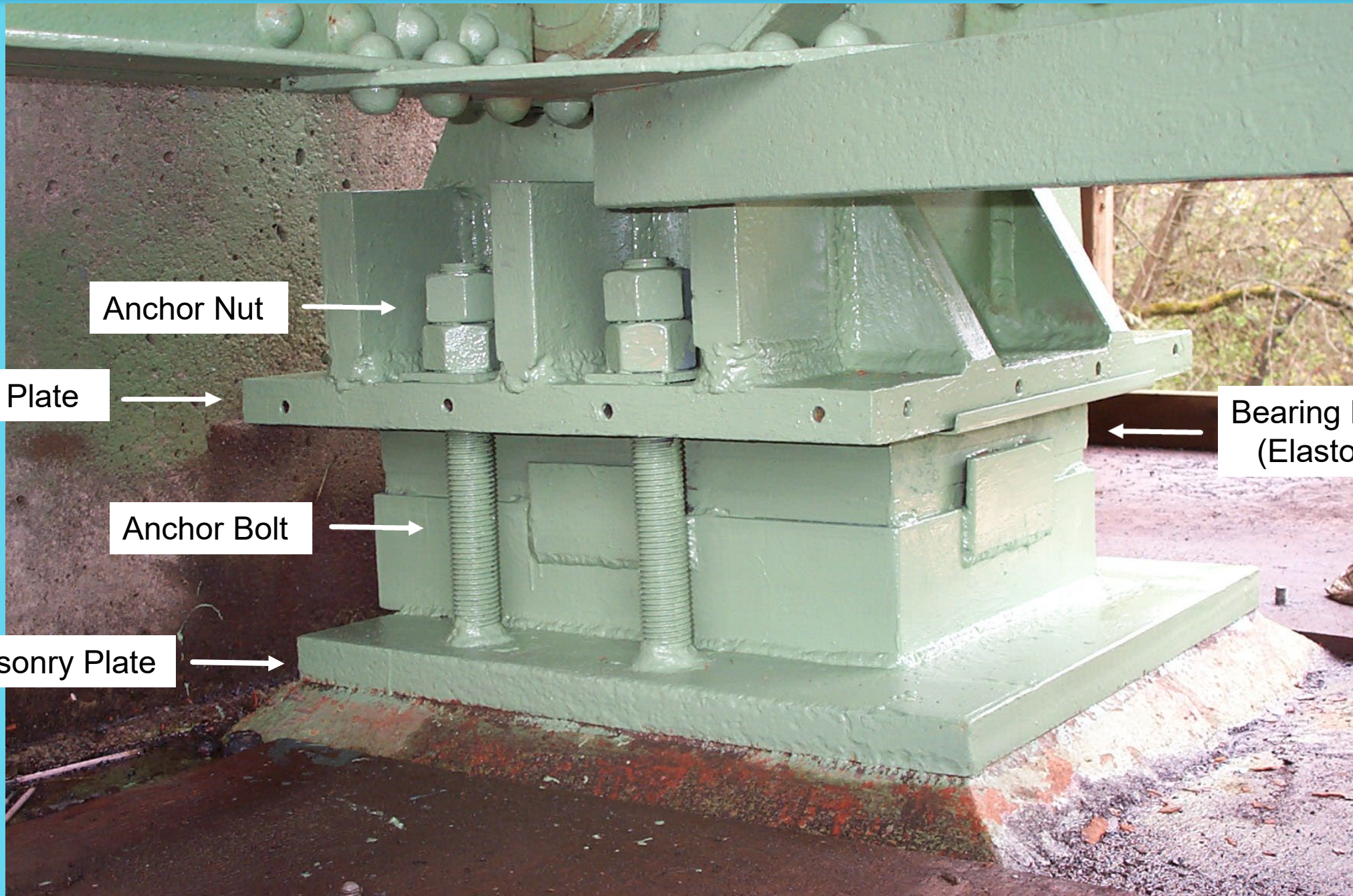












Anchor Nut

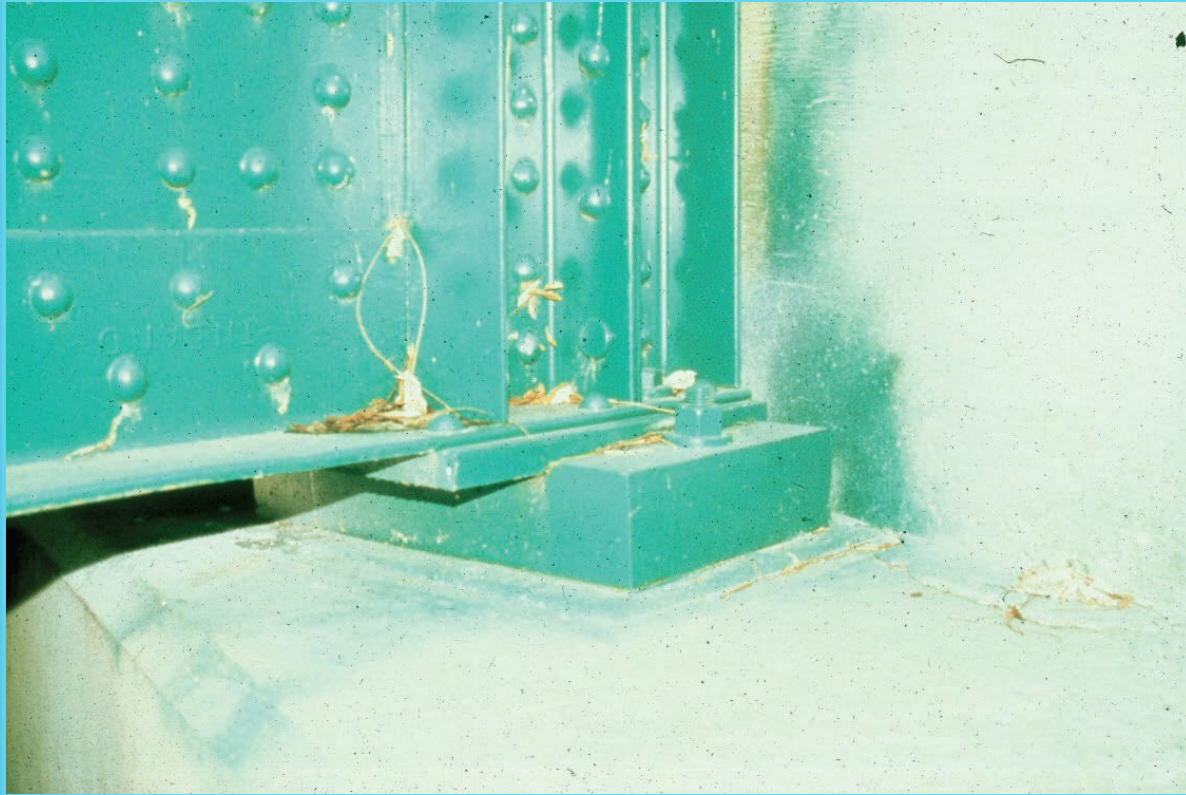
Sole Plate

Anchor Bolt

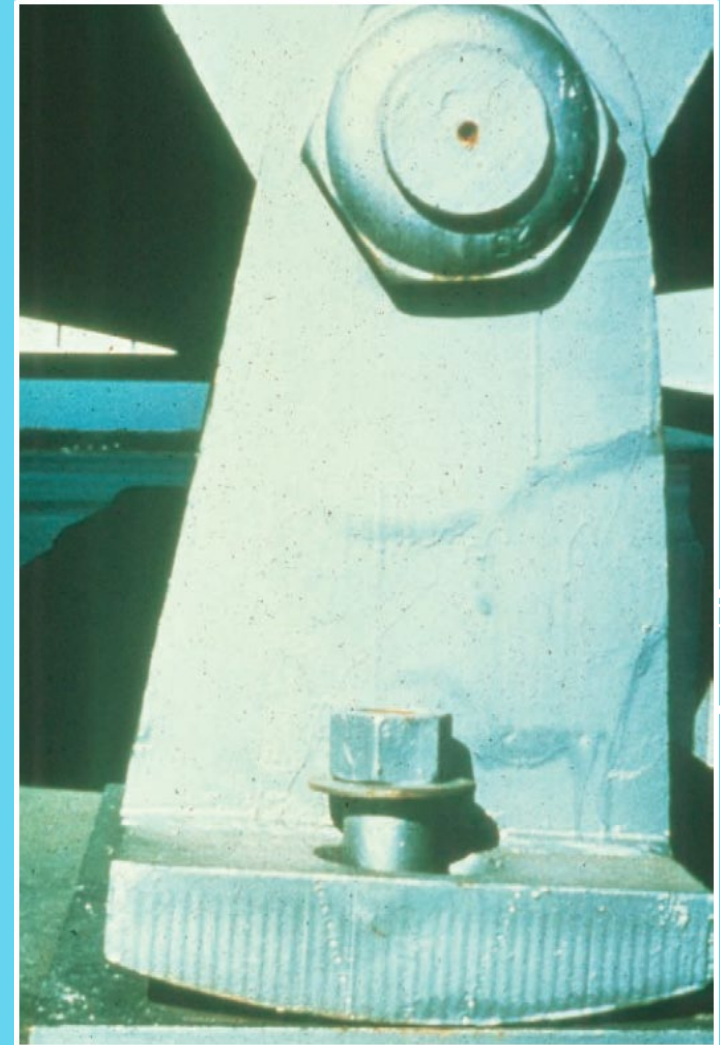
Masonry Plate

Bearing Device
(Elastomeric)

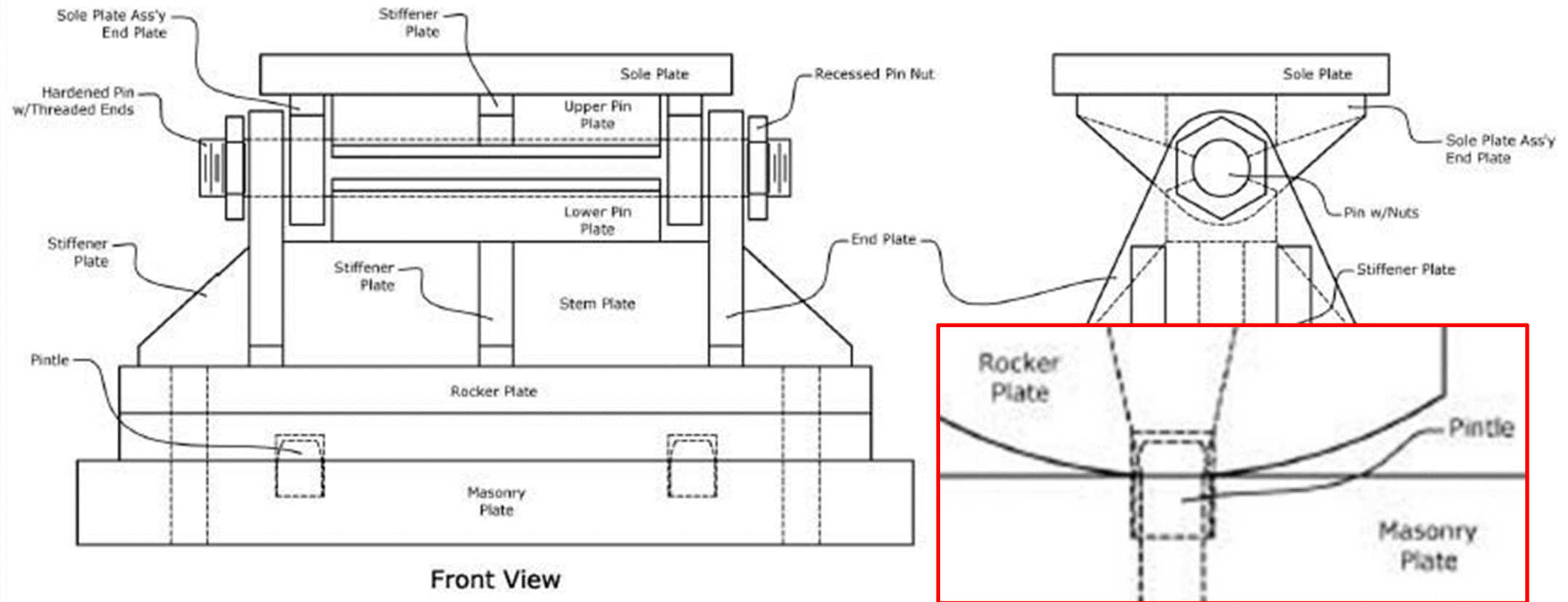
Sliding Bearings



Rocker Bearings

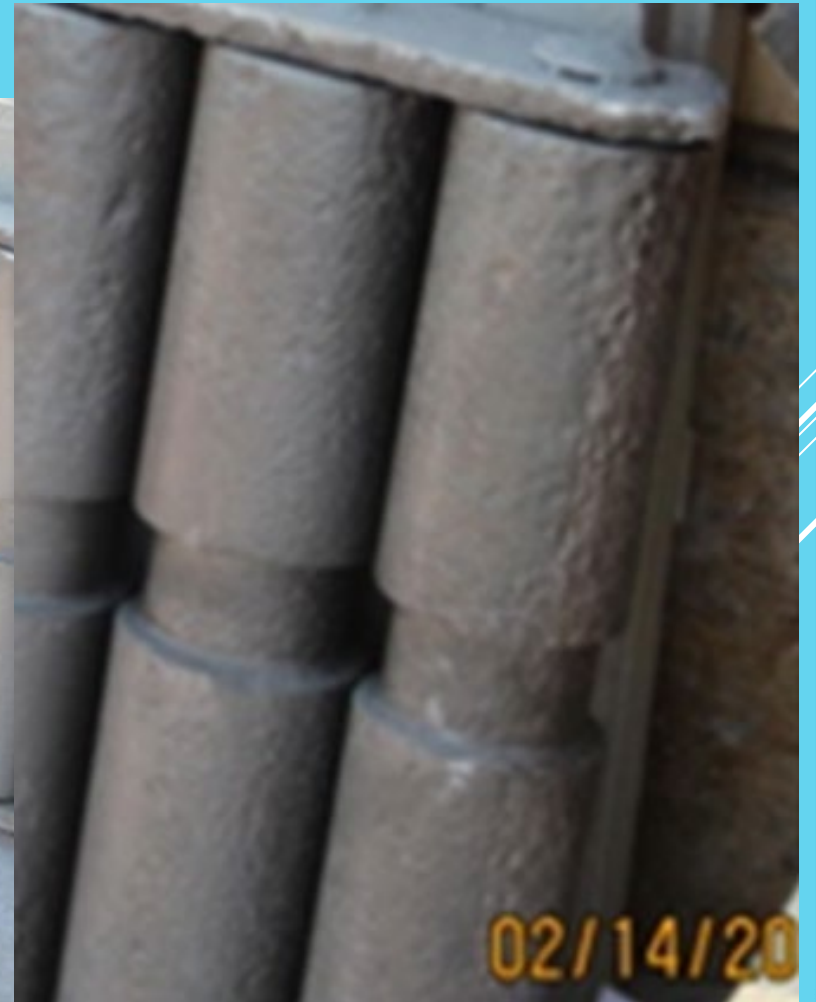
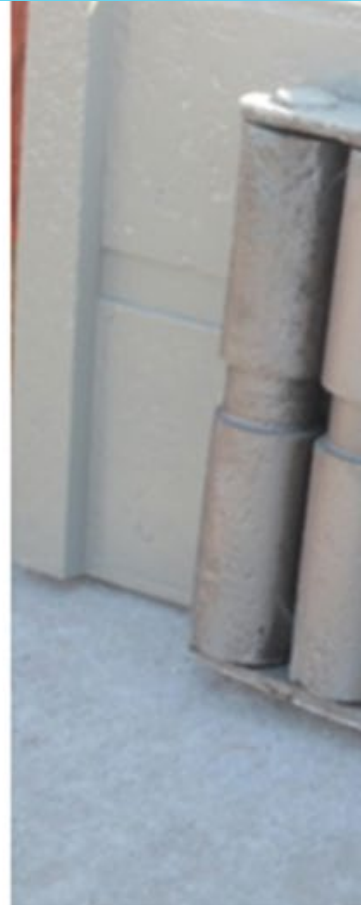


Pinned Rocker Bearings



EXPANSION "ROCKER" BEARING - PIN STYLE

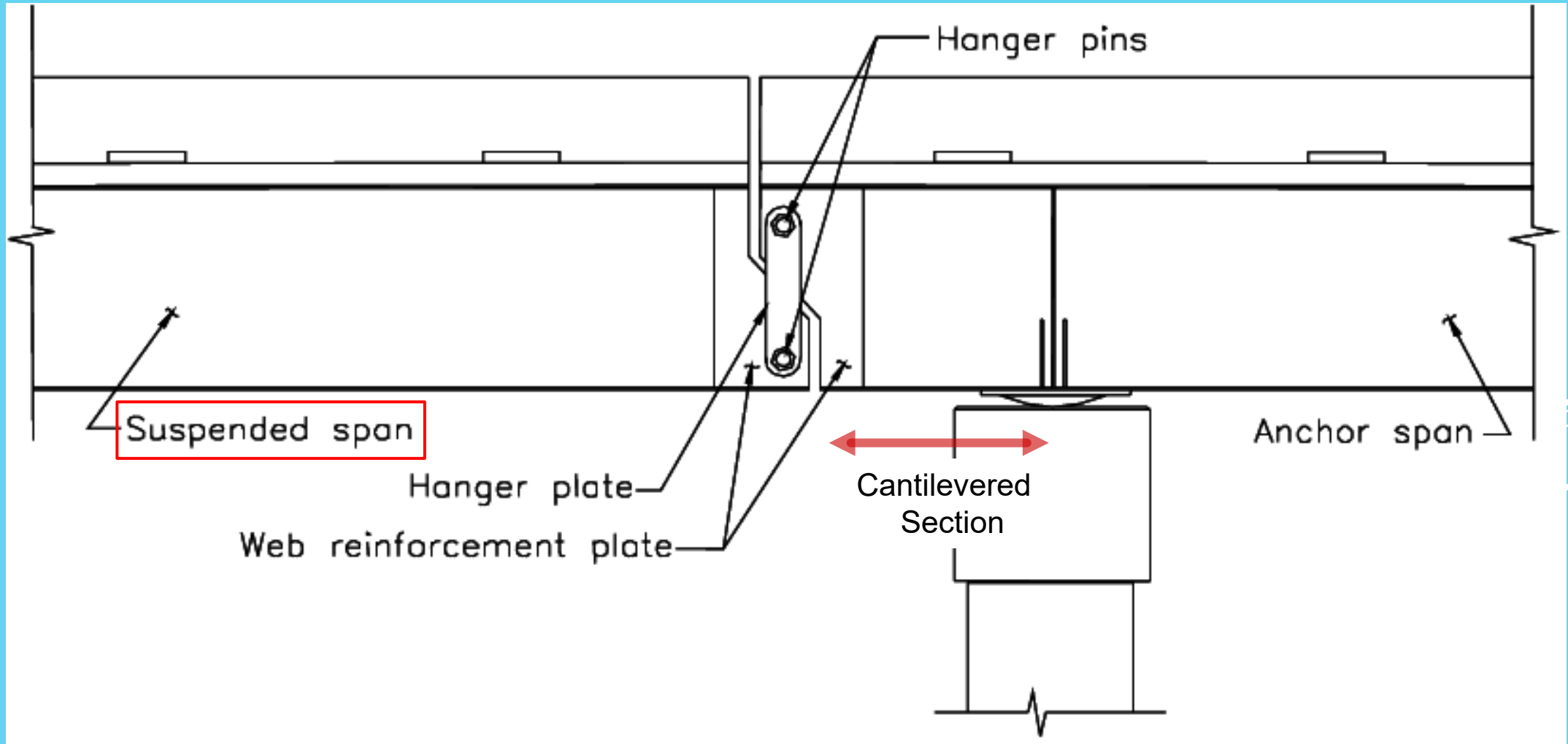
Roller Bearings



Fixed Bearings



Pin and Hanger





Pin and Hanger

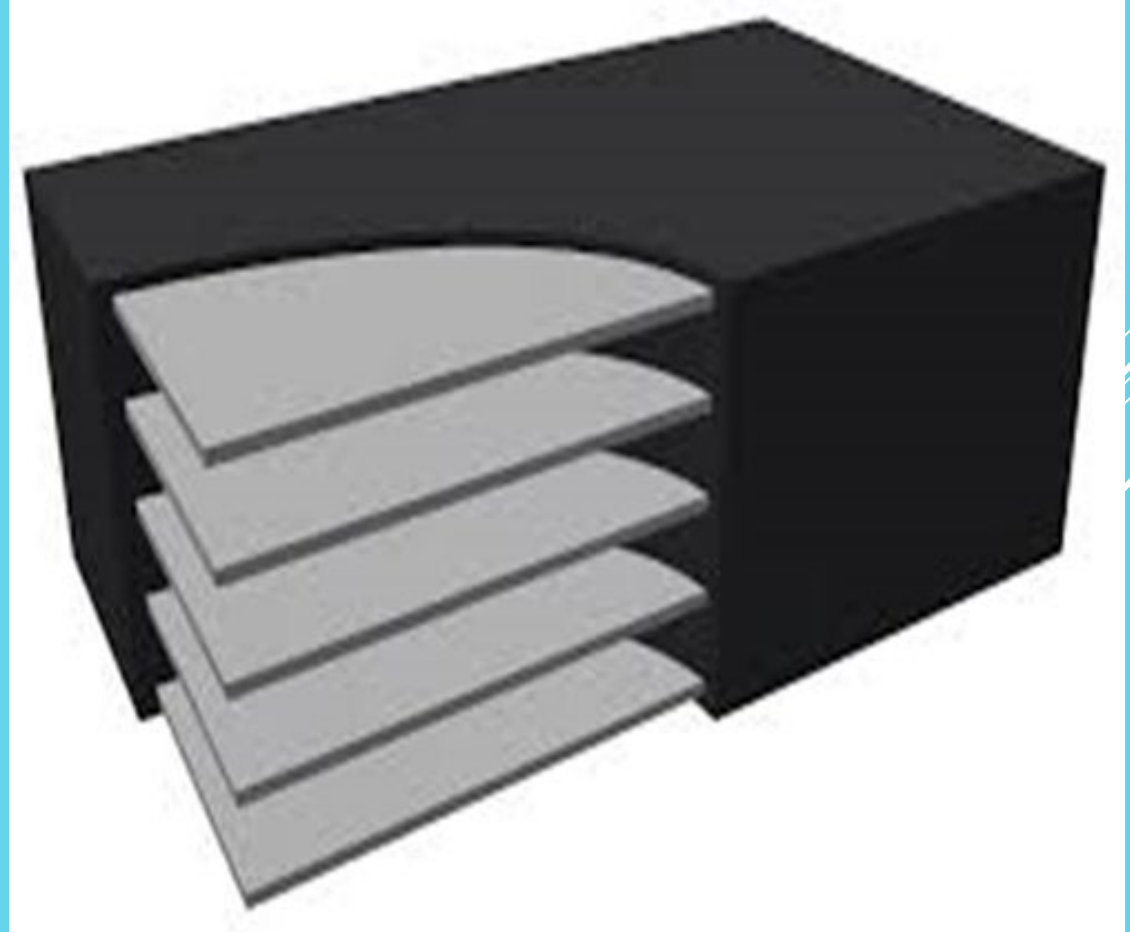


Elastomeric

Plain Elastomeric Bearings



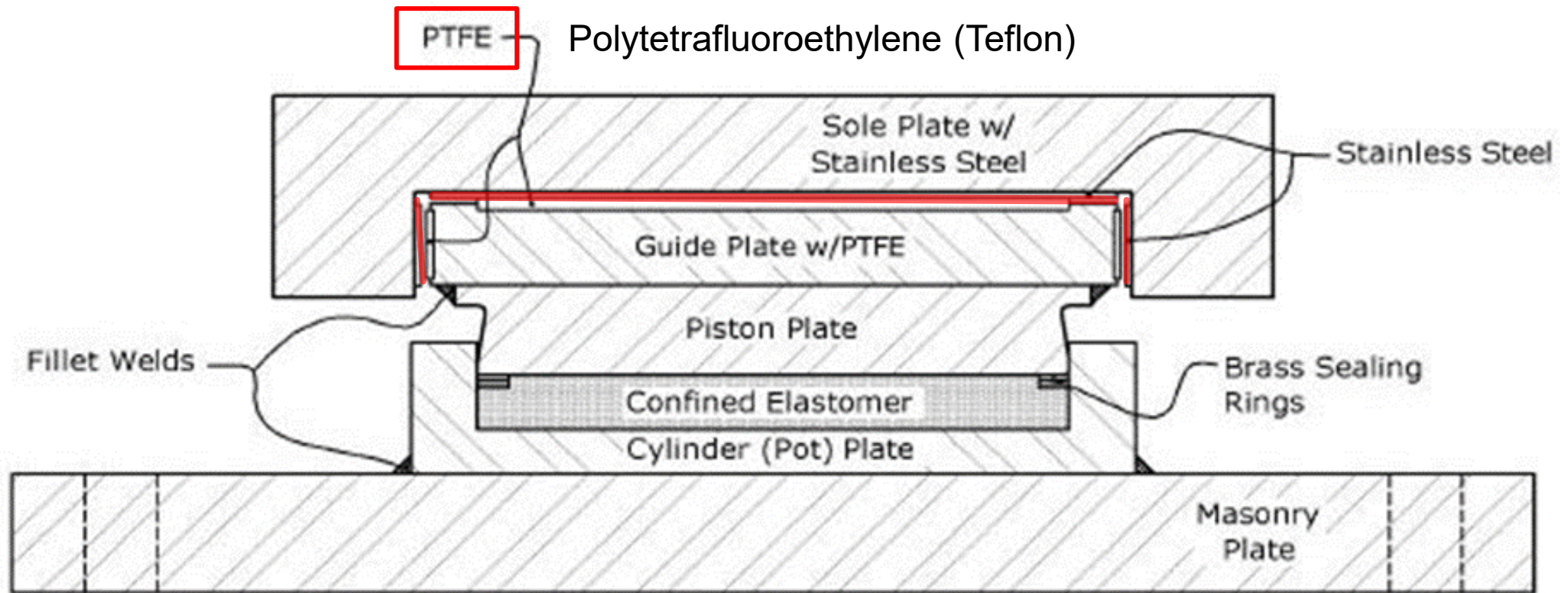
100 % NEOPRENE BRIDGE BEARING PADS



Elastomeric



Pot Bearings



GUIDED EXPANSION POT BEARING

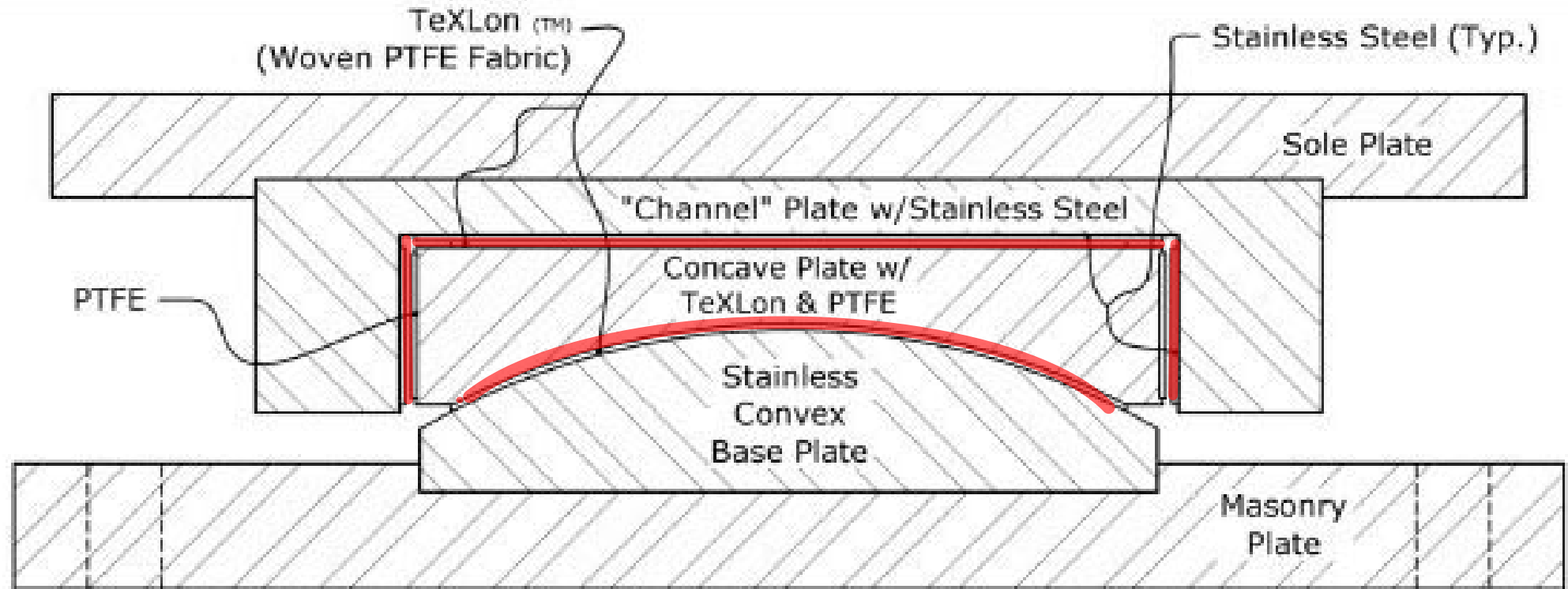
Pot Bearings



Spherical Bearing

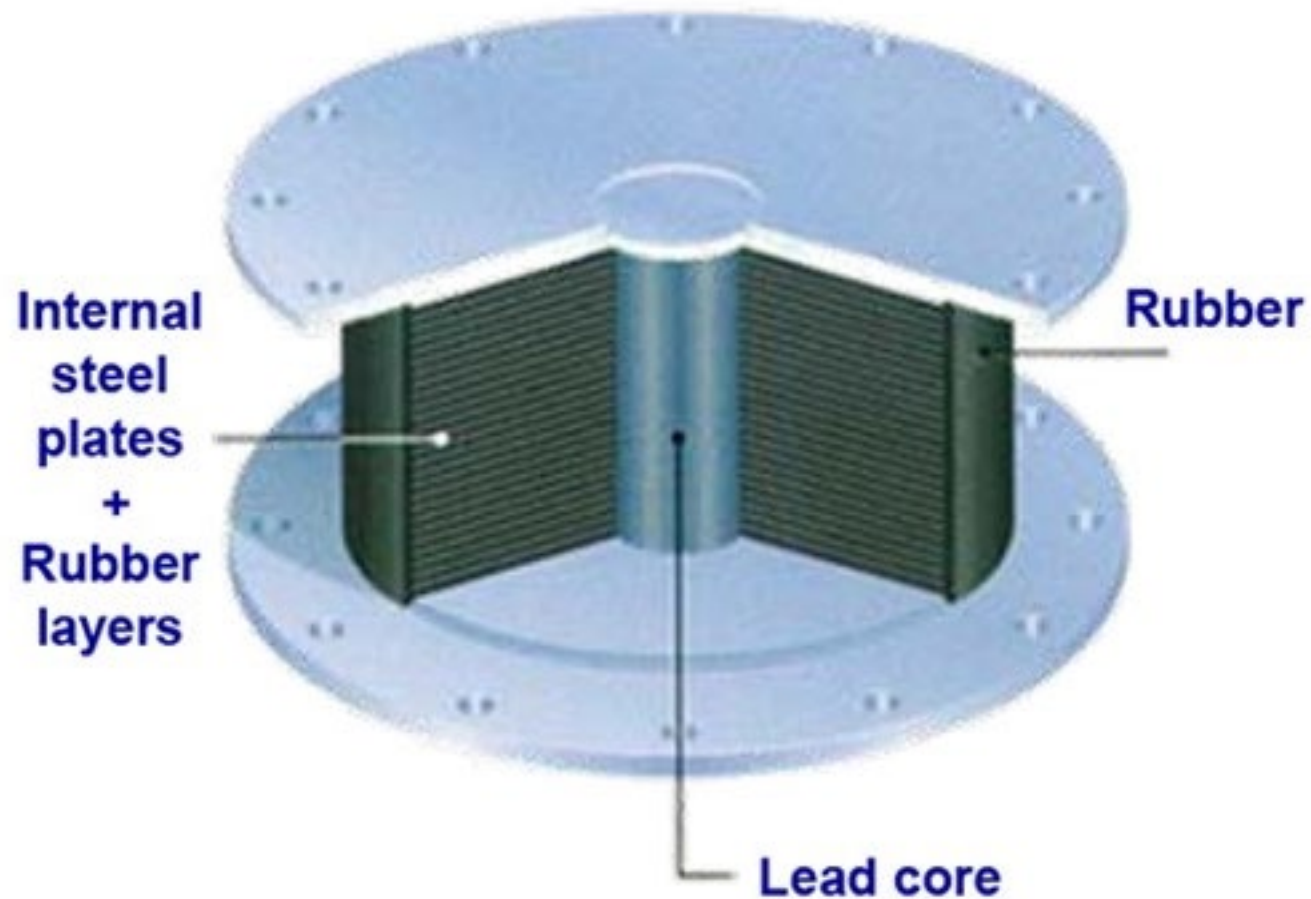


Spherical Bearing



GUIDED EXPANSION SPHERICAL BEARING

Isolation Bearing







Bearing Maintenance



Debris



Loose Anchor Nuts
Bent, Missing, or
Broken Anchor Bolts



Nested Solid Rocker Bearing

Corrosion



Roller Bearing

Displacement



Elastomeric

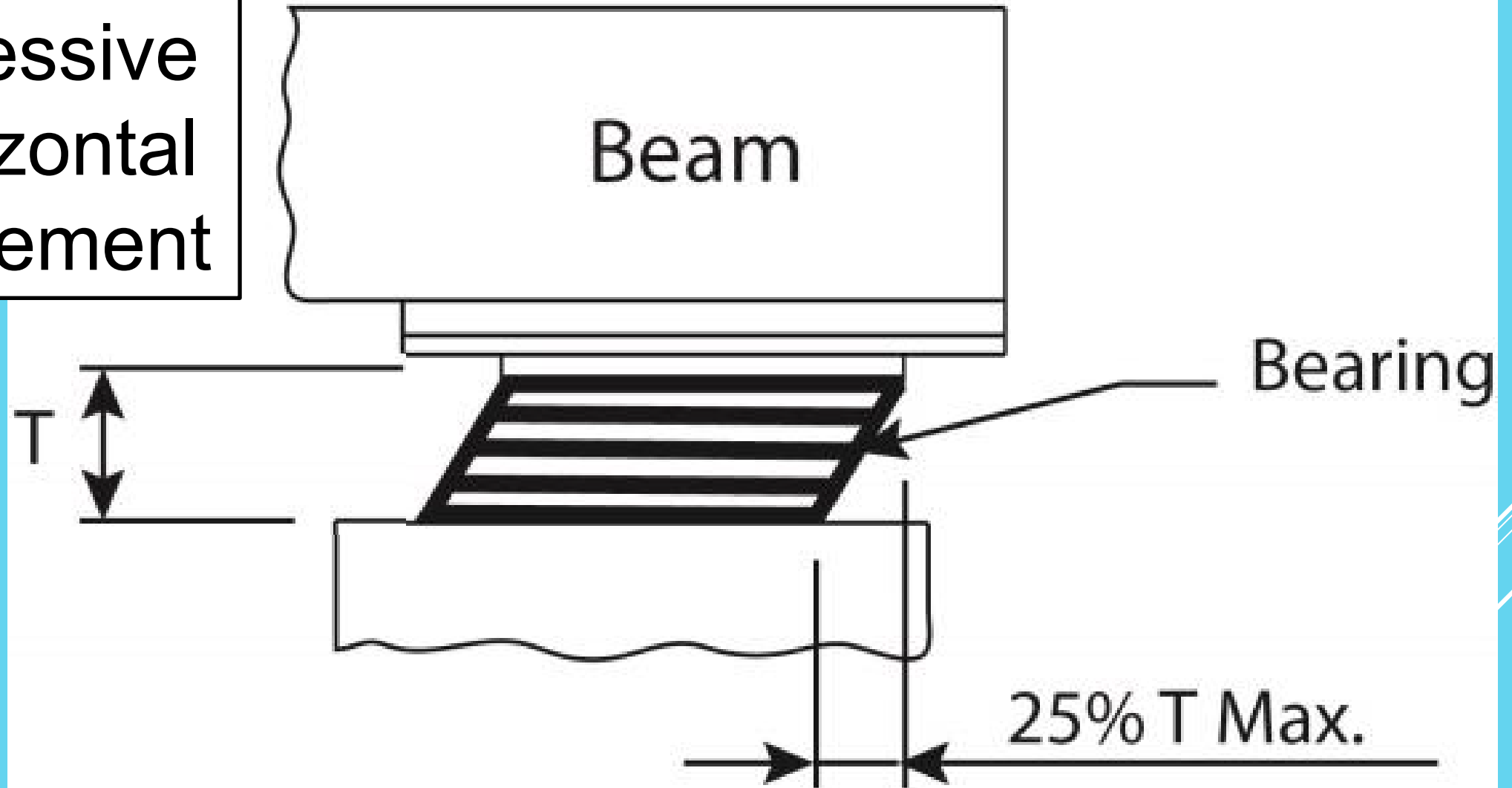
Cracking, Splitting, Bulging



Excessive Horizontal Movement

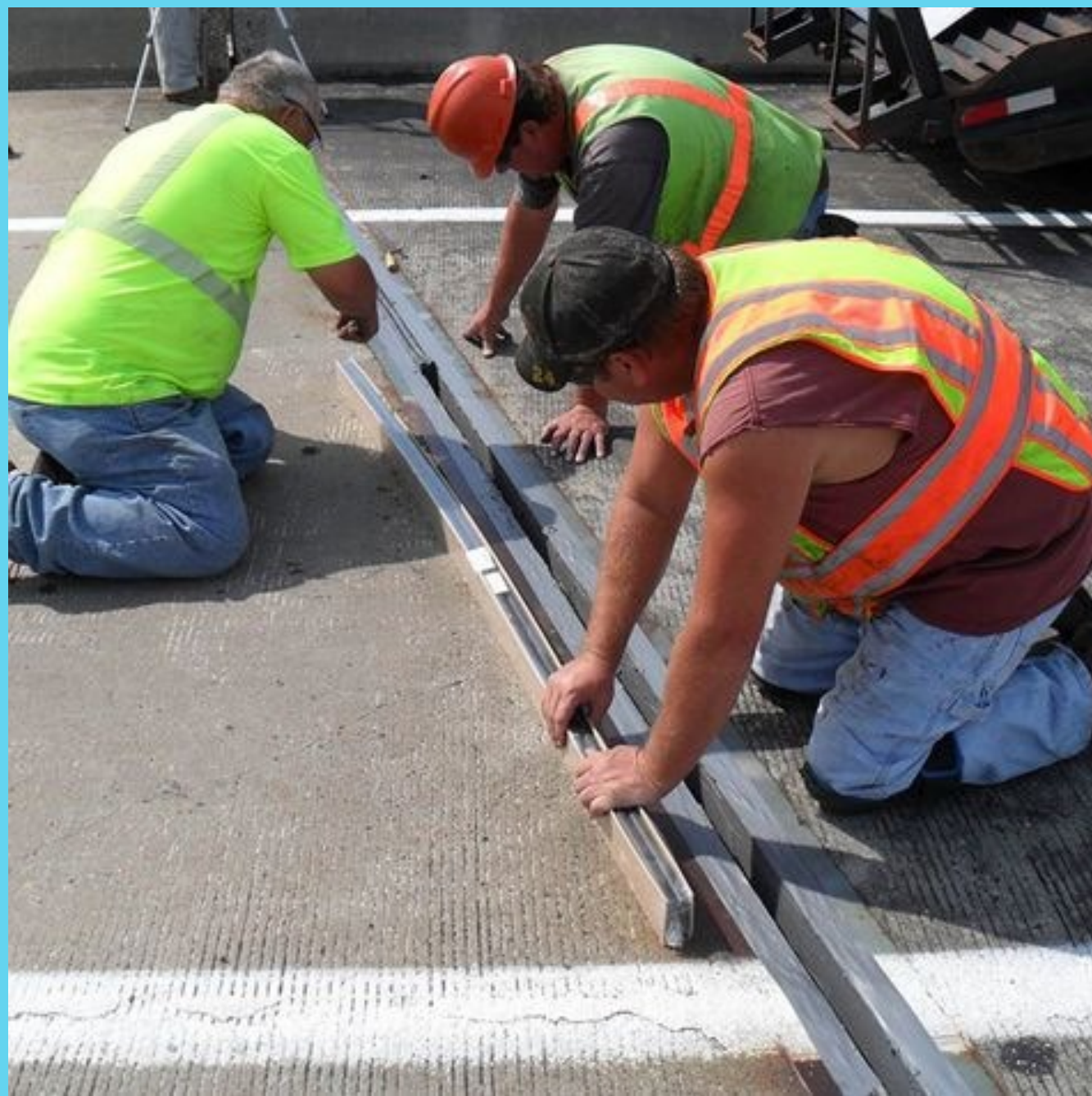


Excessive
Horizontal
Movement



Alignment







What's next?

Clean?

Seal?

Repair / Reset / Replace?



Clean

Pressure Wash

Scrapers

Needle Guns

Sandblasting





Seal

Rust Converter?

iron oxide (rust) is chemically changed to iron phosphate

Protective Coating System

Wasser, Rustoleum, 1, 2, or 3 Part

Protect parts from coating

(don't paint the Elastomeric)

Repair / Reset / Replace?

Almost all Repair, Reset, or Replacement projects will require jacking

All Bridge Jacking Plans should be approved by an Engineer





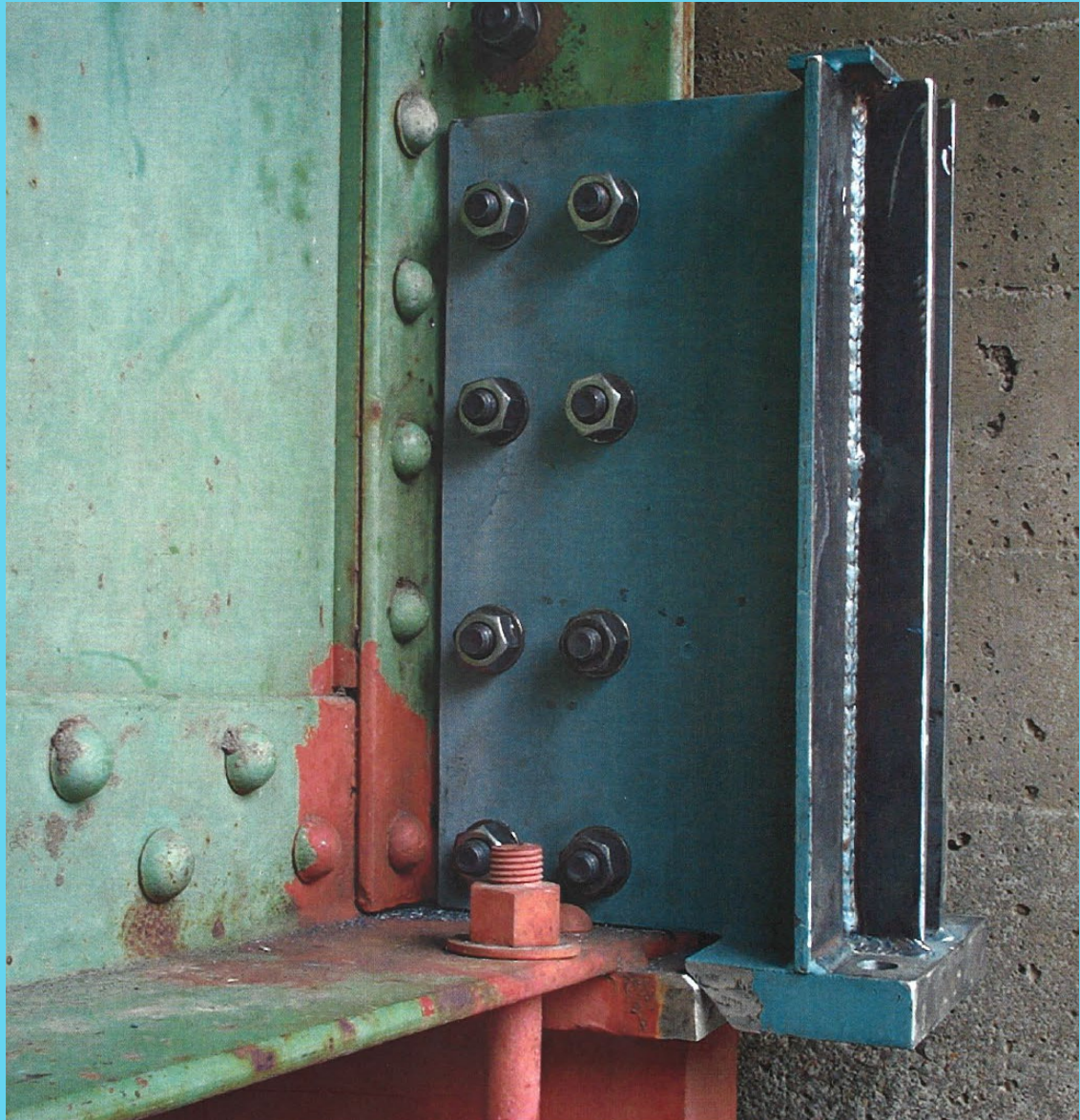


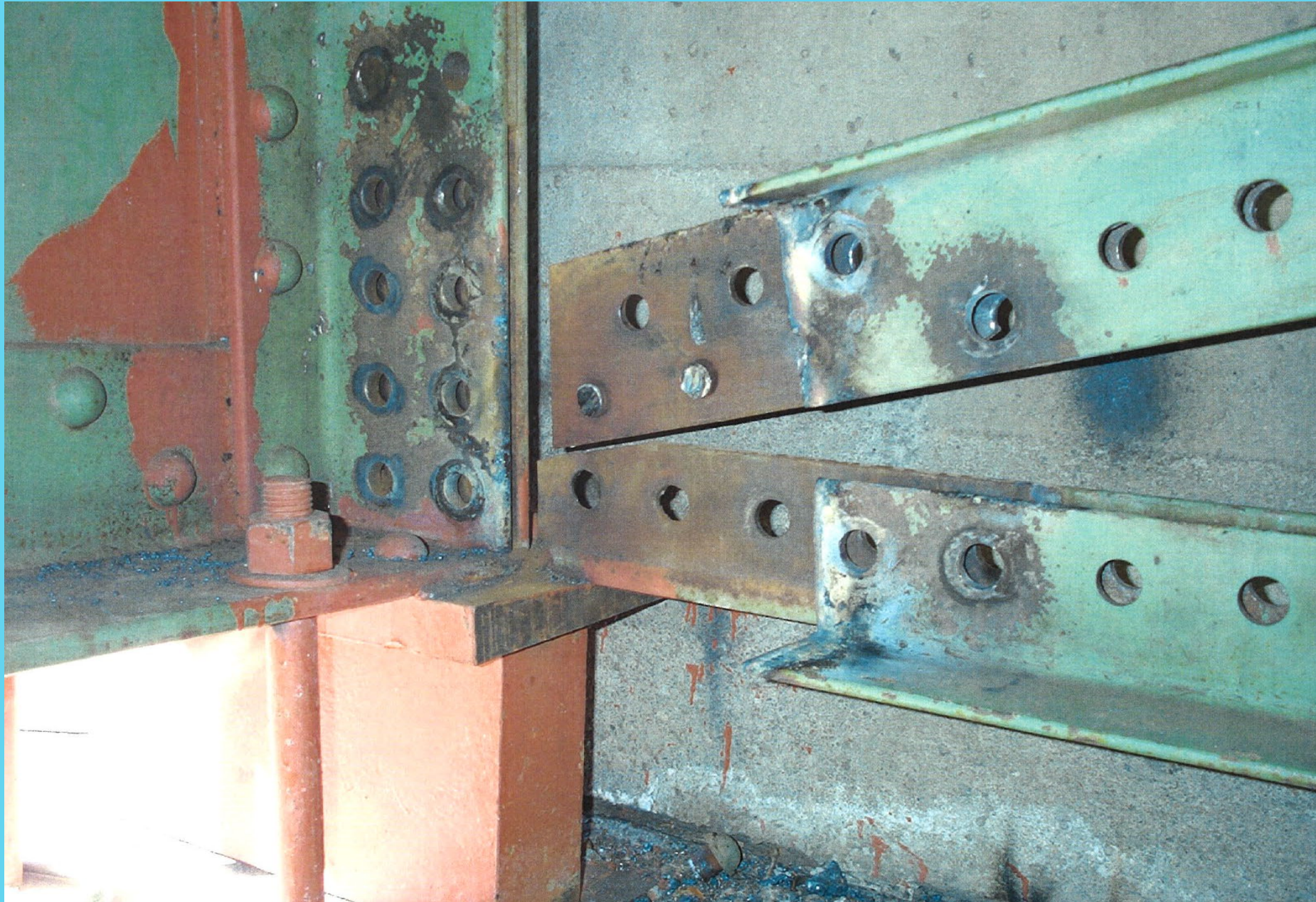


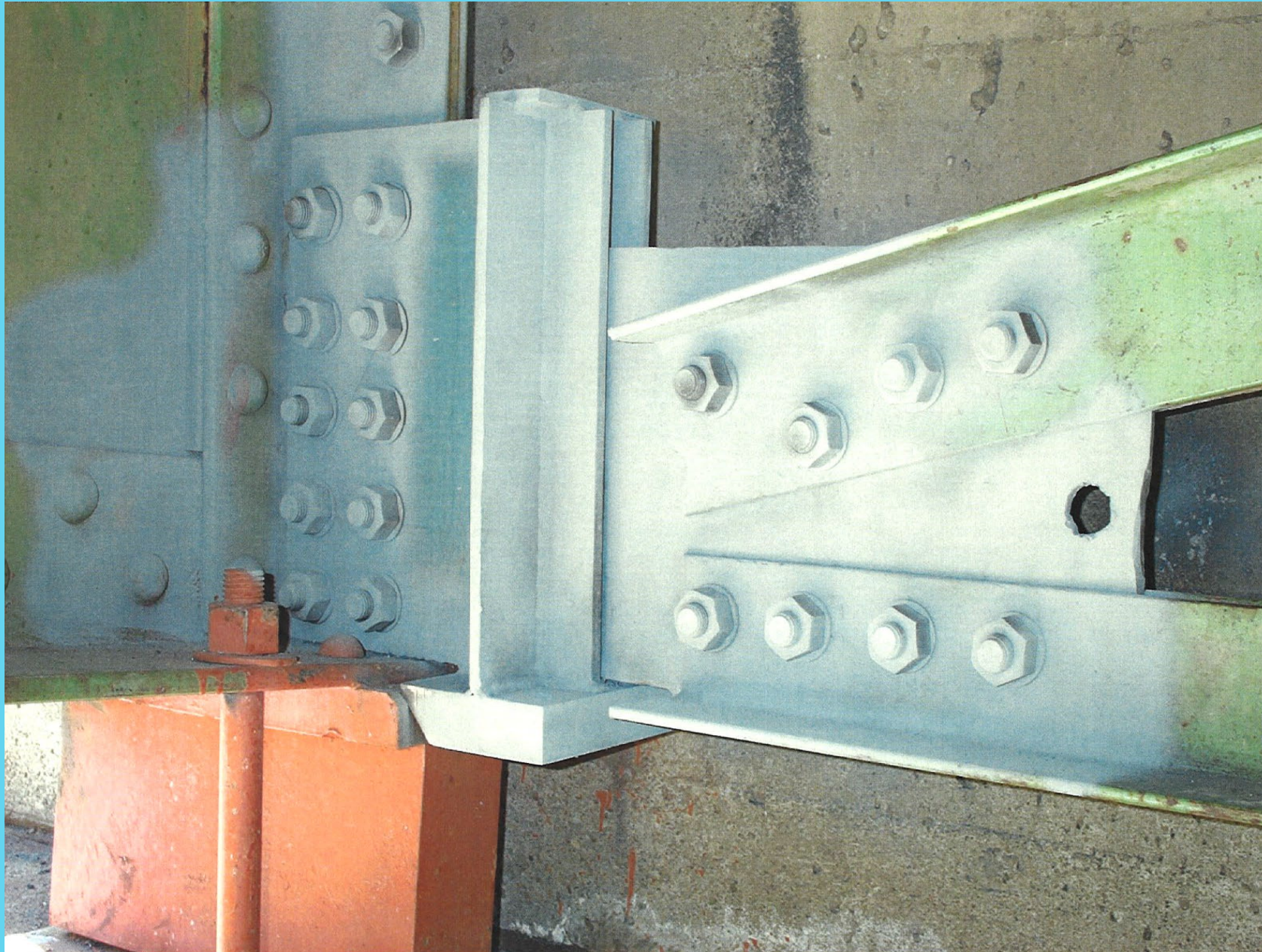






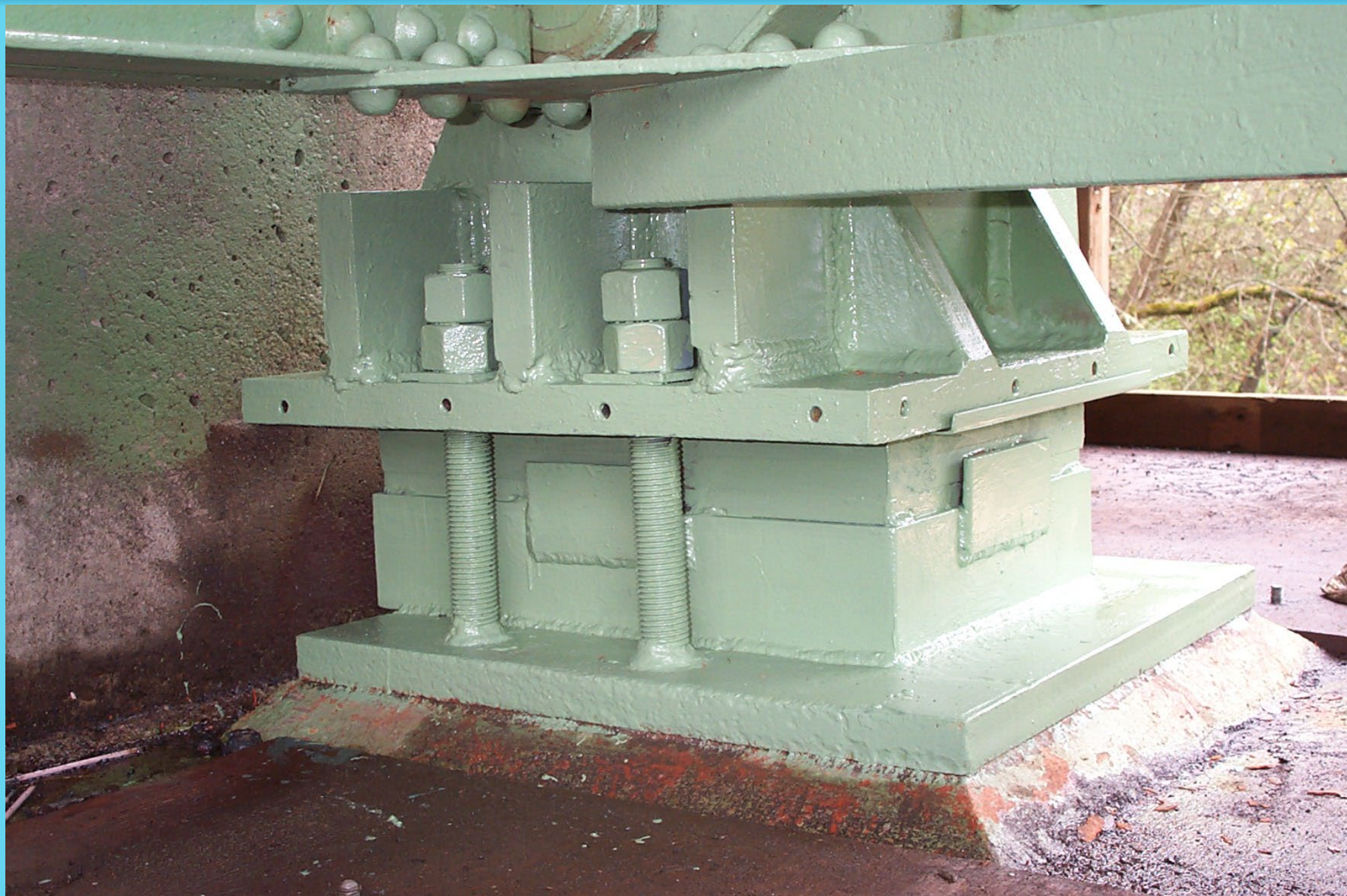


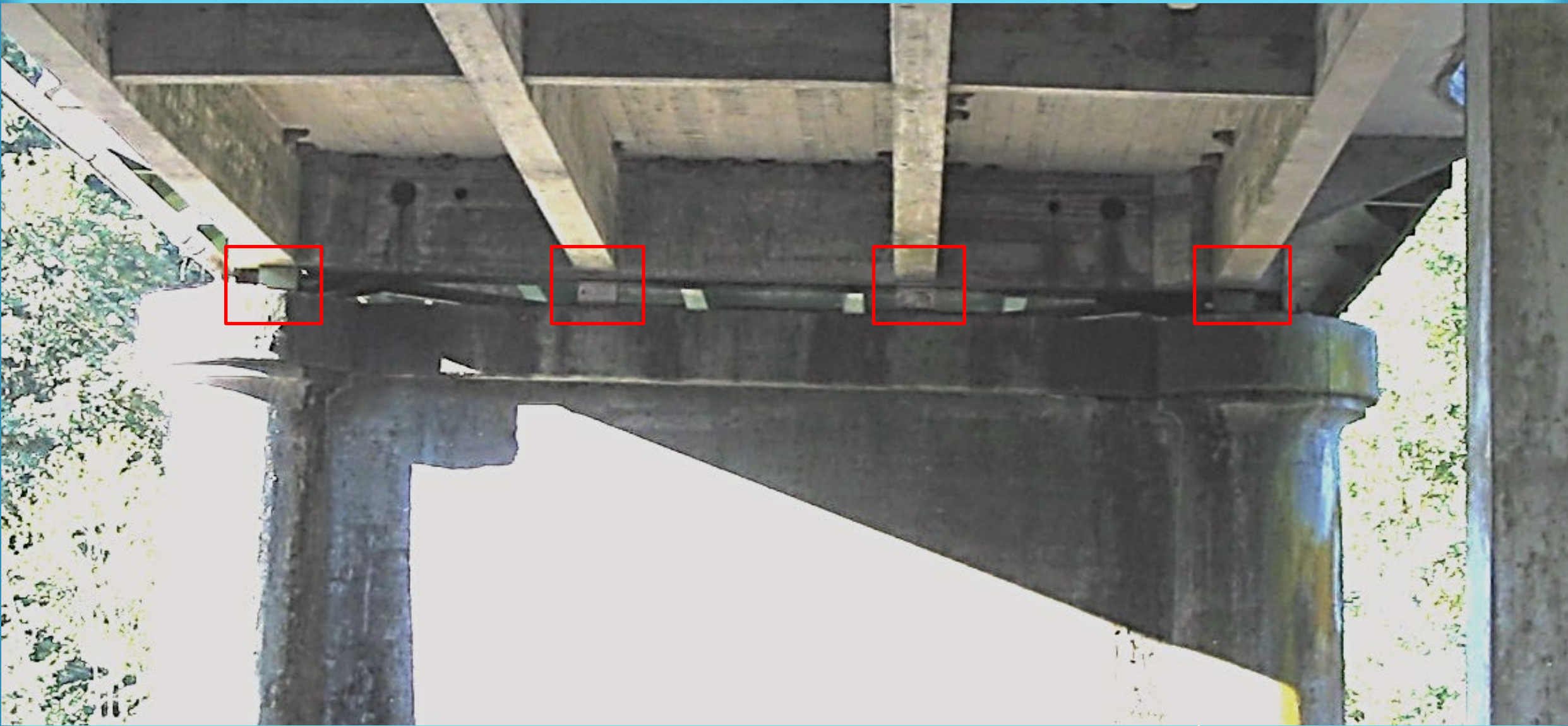
























1. 6. 2003



















Task	Sub-Task	Start Date	Materials	Mtl Status	Special Tools	Tool Stat	Equipment	Eqp Status	Manpower
Schedule Road Closure									Christian
Schedule Toilet Delivery									Jamie
Place Road Signs and Devices	Record Traffic Control Devices								CC Traffic / CCBM
Deploy to Site		16-Jul-18	Permit	CCBM	Turbidity Monitor	CCBM	12yd Dump, Trailer, Mini Hoe	CCBM	
							461 with Footings, Steel	CCBM	
							06-374 Work Truck	CCBM	
							06-377 Work Truck	CCBM	
							11-341 Guardrail Truck	CCBM	
							09-349, Trailer, Dingo	CCBM	
Remove Fence									
Remove Guardrail(s)									
Install Dam(s)			14 Large Sandbags	CCBM	3" x 16' Slings	CCBM	Excavators	CCBM	
			200 Small Sandbags	CCBM	Pallet Forks	CCBM	461	CCBM	
			plastic sheeting						
Install Fish Nets			2 - Nets	Devin	T Post Driver	CCBM			
			16 - T Posts	CCBM					
Install Pump System									
	Place 3" minus for Pump Pads		6yds 3" minus	CCBM					
			Pump System, Hauled to site by Xylem		2-Electric 2" Pumps	CCBM			
			2 - Containment Tubs with Brackets	CCBM	200' - 2" Hose	CCBM			
			100' roll Plastic Sheeting						
			Sediment Bag	Xylem					
			Pump Screen	CCBM					
			100 Large Zip Ties	CCBM					
			6 Bio Bags	CCBM					
			1 bag Oil Containment Booms	CCBM					

Place 4 Footings, 2 US, 2 DS		4 - 4 x 4 x 1 Precast Footings	CCBM	4 Leg Sling
Place Falsebeam under bridge		W10 x 49 x 32' Beam	CCBM	Beam Rollers / Wheeled Carts?
Secure Falsebeam to Handrail			CCBM	Turnbuckles / Chains
Shim Falsebeam to bottom of Concrete Channel Beams		1 bundle Cedar Shims.		
Place 2 Outside Jackplates				2(4) - Jackplates
Place 2 Outside Jacking Posts		2(4) - 8 x 8 x 3'-6" Wood Posts	CCBM	
Place 4x4 Web Stiffeners		4(8) - 4 x 4 x 9 Wood Stiffeners	CCBM	
Load Falsebeam for moving footings				2(4) Pancake Jacks
				Pneumatic / Hydraulic Pump
				2-50' & 2-25' Jack Hoses and 4 Part Manifold
				Airline

Questions?

Comments?

Several thin, white, parallel diagonal lines are located in the bottom right corner of the slide, extending from the right edge towards the center.

Oregon Highway Bridge Maintenance

A Pilot Training Course /Workshop

