Element Condition State Tables

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1. Roadway and Deck Elements

The inspector should check:

- The pavement for unevenness, settlement, or roughness (shown below).
- Shoulders, slopes, drainage, and the approach guardrail.
- The deck and sidewalks for various defects, noting the size, extent, severity, and location of each element. The location should be referenced using the span number or side.
- The expansion joints for sufficient clearance and for an adequate seal.
- The safety features, including barriers and handrails (shown below), signs and lighting are present and identify their condition.

Condition states of pavement			
Condition State 0	Roadway is smooth, no rutting and only small roughness.		
Condition State 1	Roadway has small, visible rutting, longitudinal unevenness that can be fixed with local repair.		
Condition State 2	Roadway has ruts, cracking and small holes. People need to pay attention when crossing, but no safety issues. Needs resurfacing.		
Condition State 3	Hollow ruts and holes. Safety of a road user is affected and whole pavement needs replacement.		

Condition states of barriers and handrails			
Condition State 0	The elements have no remarkable defects or wearing marks. The overall appearance is as good as new.		

Condition states of barriers and handrails

Condition State 1	The elements have minor superficial damages and deformations. Wearing and deterioration processes have occurred. The overall appearance is clean, but pitting corrosion can occur.		
Condition State 2	The elements have defects, like pitting corrosion, but the severity of the damages does not affect functional requirements.		
Condition State 3	The element has defects that affects the safety of users.		

2. Superstructure Elements

The superstructure must be inspected thoroughly since the failure of a main supporting member could result in the collapse of the bridge. The most common forms of main supporting members are:

- Girders
- Floor Beams and Stringers
- Slabs
- Trusses
- Eye bar Chains
- Arch Ribs
- Frames
- Bearings must be inspected thoroughly since they provide a critical link between superstructure and the substructure. For instance, one will need to record the difference between a rocker tilt and a fixed reference line, noting the direction of the tilt in the case of a rocker bearing. For an elastomeric bearing, for instance, any loss of section or major wear should be noted as a deterioration in condition.
- Utilities (pipes, ducts, etc.)
- Anchorages

Condition states of concrete superstructure elements

Condition states of concrete superstructure elements			
Condition State 0	The concrete elements have no remarkable defects or wearing marks. The overall appearance is as good as new.		
Condition State 1	The elements have minor superficial damages, like honeycombing and hairline cracks. Wearing and deterioration processes have occurred.		
Condition State 2	The elements have defects, like corrosion, but the severity of the damages does not affect functional requirements.		
Condition State 3	The elements have severe defects, like peeling and heavy corrosion, the damages do affect functional requirements.		

Condition states of steel superstructure elements			
Condition State 0	The steel elements have no remarkable defects or wearing marks. The overall appearance is as good as new.		
Condition State 1	The elements have minor superficial damages, like deformation or painting defects. Wear has occurred.		

Condition states of steel superstructure elements			
Condition State 2	The elements have defects, like pitting corrosion, but the severity of the damages does not affect functional requirements.		
Condition State 3	The elements have severe pitting corrosion, that does affect functional requirements.		

3. Substructure Elements

The substructure supports the superstructure and is made up of abutments, piers and bents, footings, and piles. If the "as-built" plans are available, the field-measured dimensions of the substructure units should be compared to those presented on the plans. Since the primary method of bridge inspection is visual, all dirt, leaves, animal waste, and debris should be at least partially removed to allow close observation and evaluation. Substructure units should be checked for:

- Settlement by sighting along the superstructure and plumbing vertical faces.
- In conjunction with scouring inspection of the waterway, the substructure unit should be checked for undermining, noting both its extent and location.

Condition states of abutments			
Condition State 0	Elements have no remarkable defects, settlements or scouring. The overall appearance is as good as new.		
Condition State 1	Elements have small visible defects, settlements or scouring. The overall appearance is as good, but small repairs are needed.		

Condition states of abutments			
Condition State 2	Elements have remarkable defects, settlements or scouring. The overall appearance is satisfactory and elements function as intended, but repairs are needed.		
Condition State 3	Elements have critical defects, settlements or scouring. The elements may not function as intended and replacement is needed.		

4. Channel and Waterway Elements

Waterways are dynamic in nature, with their volume of flow and their path continually changing. Thus, the bridges passing over them must be inspected for the effects of these changes:

- Maintain a record of the channel flow profile and alignment, noting any meandering of the channel both upstream and downstream.
- Report any skew or improper location of the piers or abutments, that can be related to scour.