2013 Bridge Elements Questions and Answers

How to use this document

With the advent of the 2013 AASHTO Element Level Inspection criteria, we have received many questions from the consultant community requiring clarification and guidance. This document is being developed for the purpose of providing up-to-date information regarding many of the questions that we have frequently received. It is a living document intended to supplement the commentary provided by the NJDOT Bridge Element Inspection Manual and will be updated as necessary.

The latest questions and issues concerning element level inspection will be available with answers and resolution plans to aid in maintaining standards between all element level inspections conducted. The guidance provided by this document will periodically be incorporated into interim revisions of the NJDOT Bridge Element Inspection Manual.

This document will be organized chronologically and structured with various types of general and specific numbered questions. It includes a revision history which will track all changes made within the document to simplify use of this resource.

Revision History

<u>**1/30/2015**</u>
- Initial release
- Questions 1 through 12 published

Contents

Question 1 – Element Migration Errors
Date Revised: 1/30/2015

Are there any elements which are not properly migrated from CoRe to AASHTO 2013 Bridge Elements?
Answer: Yes, systematic migration for all bridges was a complex process that translated elements in bulk. It was not feasible to have this automated process work for each and every element. For example, wingwalls were previously coded as one type regardless of material. NJDOT has now created Agency Defined Elements for wingwalls constructed of various materials. These materials include Reinforced Concrete, Timber, Masonry and other materials.
Resolution: Inspectors are responsible for verification of all migrated elements for every completed bridge inspection.

Question 2 – Steel Protective Coating on Bearings
Date Revised: 1/30/2015

Is it required to code Element #515 - Steel Protective Coating (typically paint) for bearing elements?
Answer: No, Element #515 – Steel Protective Coating is not coded for bearing elements. However, all other applicable bearing defects are coded.
Resolution: To be included in bearing element commentary in the NJDOT Bridge Inspection Manual.

Questions 3 to 6 – Bridge Railings

Question 3 – Combination Bridge Railing Identification
Date Revised: 1/30/2015

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| How are bridge railings constructed of multiple materials coded? |
| **Answer:**
There are a total of five (5) Bridge Railing elements in our manual.
1. To use Element #330 Metal Bridge Railing, the railings must be constructed of metal (steel, aluminum, metal beam, rolled shapes, etc.) However, the other components may be constructed of different materials.
2. To use Element #331 – Reinforced Concrete Bridge Railing, all components of the railing must be constructed entirely of concrete. |

3. To use Element #332 – Timber Bridge Railing, the railing must be constructed of timber. However, the other components may be constructed of different materials.
4. To use Element #333 – Other Bridge Railing, the railing must be constructed of materials not otherwise defined.
5. To use Element #334 – Masonry Bridge Railing, the railing must be constructed entirely of masonry blocking or stones.

Examples:
1. A single metal railing on top of a concrete bridge railing is not entirely constructed of concrete; it is coded as Element #330 – Metal Bridge Railing. The element quantity includes only the metal rail on the bridge.
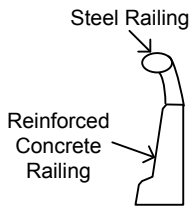
2. W-beam or Thrie beam metal railing attached to a concrete bridge railing is coded as Element #330 – Metal Bridge Railing. The element quantity includes only the metal rail on the bridge.
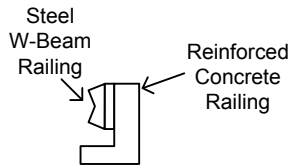
3. W-beam or Thrie beam metal railing attached to posts anchored into the deck along with a concrete parapet at the outer edges of the bridge are coded as two different elements; A) Element #330 – Metal Bridge Railing and B) Element #331 – Reinforced Concrete Bridge Railing. The element quantity includes the metal rail on the bridge for Element #330. In this example, the Reinforced Concrete Railing is considered a pedestrian railing and not coded.
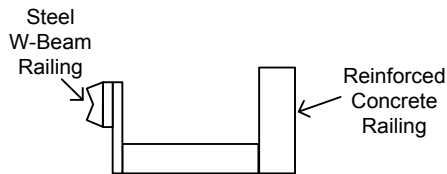
Resolution:
CombIS will be modified to allow coding of additional defects under Metal Bridge Railing and Timber Bridge Railing.

Question 4 – Combination Bridge Railing Defects
Date Revised: 1/30/2015

Is it possible to include defects for other components (constructed of various materials) besides the metal railing in Element #330 – Metal Bridge Railing?

Answer:
Yes. This element defines all types and shapes of metal bridge railing. Steel, aluminum, metal beam, rolled shapes, etc. will all be considered part of this element. Included in this element are the posts of metal, timber or concrete, blocking, and curb. Refer to the other bridge rail material elements (concrete, timber, masonry, other) for specific defects for assessing the condition of posts, blocking and curbs that may be constructed of materials other than metal.

Resolution:
This functionality will be added to the CombIS to accurately represent the condition of other materials on a metal railing.

Question 5 – Other Bridge Railing
Date Revised: 1/30/2015

Can Element #333 – Other Bridge Railing be used when a concrete parapet has a metal railing attached?

Answer:
No. Element #333 – Other Bridge Railing defines all types and shapes of bridge railing except those defined as metal (steel, aluminum, metal beam, rolled shapes, etc.), concrete, timber, or masonry. The concrete parapet with a metal railing attached should be coded as Element #330 – Metal Bridge Railing. The Other Bridge Railing element is intended to be used for elements not otherwise defined.

Resolution:
None

Question 6 – Abrasion/Wear on Reinforced Concrete Bridge Railings
Date Revised: 1/30/2015

There is no option in CombIS to add Defect #1190 – Abrasion/Wear to Element #331 – Reinforced Concrete Bridge Railing and it is certainly applicable to concrete. Is there a reason for this?

Answer:
Defect #1190 is used for Abrasion/Wear on concrete and can also be used to represent scaling defects. This defect is applicable to Reinforced Concrete Bridge Railings.

Resolution:
CombIS will be modified to allow coding of Defect #1190 – Abrasion/Wear on Element #331 – Reinforced Concrete Bridge Railing.

Question 7 – Prestressed Concrete Open Girder/Beam Protection
Date Revised: 1/30/2015

Can Element #109 – Prestressed Concrete Open Girder/Beam have the option to add Element #520 – Concrete Reinforcing Steel Protective System and Element #521 – Concrete Protective Coating? It is currently not possible to code these in CombIS.
Answer: Yes. These protective systems are applicable to Element #109 – Prestressed Concrete Open Girder/Beam and must be verified on the bridge construction plans prior to coding.
Resolution: To be corrected in the CombIS system.

Question 8 – Approach Pavement Coding
Date Revised: 1/30/2015

How would Approach Pavement be coded if there is no Slab present?
Answer: There is no element for Approach Pavement and it is not required to be coded. However, Approach Pavement defects must still be documented in the field notes.
Resolution: To be included in Approach Slab commentary in the NJDOT Bridge Inspection Manual.

Question 9 – Concrete Approach Slabs with Overlay
Date Revised: 1/30/2015

When a Concrete Approach Slab (RC or PS) has an asphalt overlay, what is the proper coding and how is it calculated?
Answer: Element #321 – Reinforced Concrete Approach Slab or Element #320 – Prestressed Concrete Approach Slab must be coded in accordance with the bridge construction plans/field measurements or 25' length, whichever is less, multiplied by the total width. Additionally, Element #510 – Wearing Surface can be coded with an equivalent quantity.
Resolution: To be included in Approach Slab commentary in the NJDOT Bridge Inspection Manual and CombIS.

# Question 10 – Integral Abutment Relief & Sleeper Slabs

Date Revised: 1/30/2015

For structures with integral abutments, how are the quantities of relief slab and sleeper slabs (RC or PS) determined?

Answer:

A relief slab will be considered part of the bridge deck and coded accordingly based on the measurements from the bridge construction plans or taken in the field.

A sleeper slab is considered an approach slab and will be coded as such. It must be coded in accordance with the bridge construction plans/field measurements or 25' length, whichever is less, multiplied by the width. If asphalt overlay is present then Element #510 – Wearing Surface can be coded with an equivalent quantity. Refer to the following sketch of a typical integral abutment bridge.
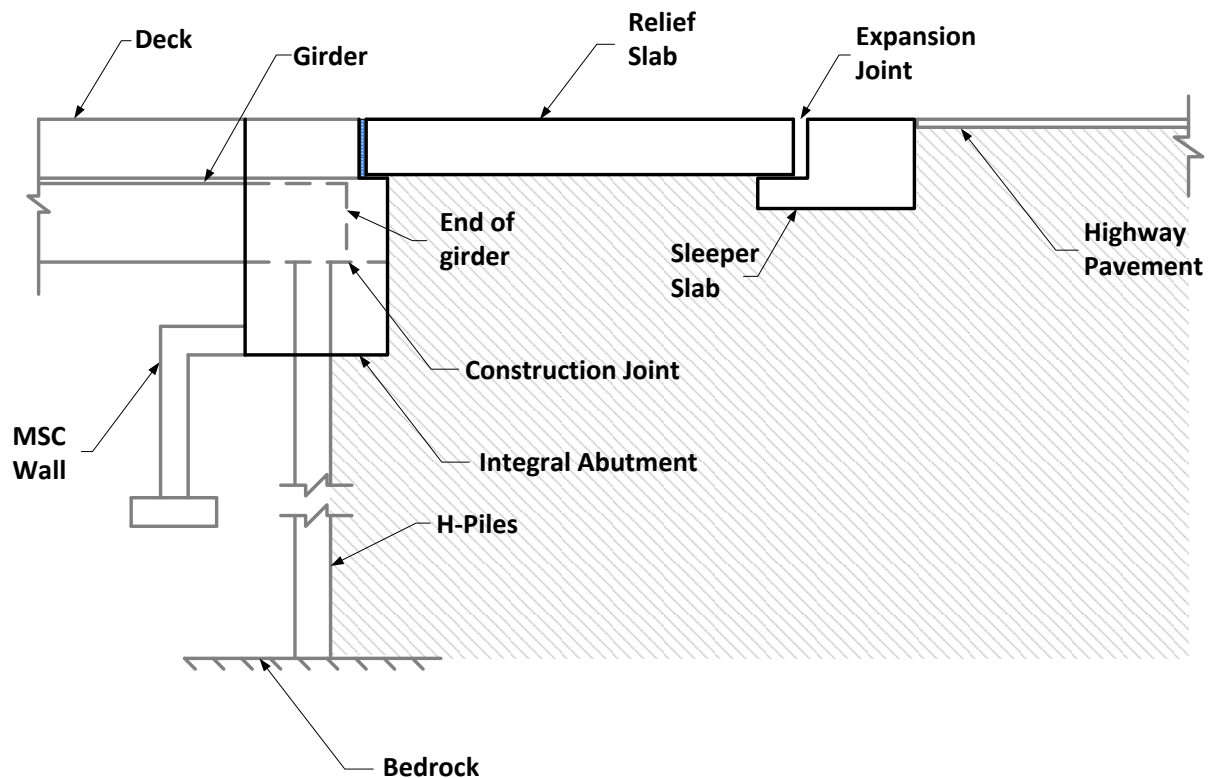
Resolution:
None

Question 11 – Defect Coding in Condition State 1 (Cracking)

Date Revised: 1/30/2015

CombIS does not allow any defects to be coded in Condition State 1 although some defects are defined in Condition State 1 in the manual. One example of this is Defect #1110 – Cracking (PSC). Why is this?

Answer:
As per the 2015 interim revisions to the AASHTO Manual for Bridge Element Inspection for Defect #1110 – Cracking (PSC); cracks less than 0.004 inches wide are insignificant and a defect is not required to be coded. This also applies to Reinforced Concrete cracking and any other defects in Condition State 1.

Resolution:
To be included in the commentary for all applicable elements in the NJDOT Bridge Inspection Manual.

Question 12 – Curb/Sidewalk Settlement Defect

Date Revised: 1/30/2015

For the Curbs/Sidewalks elements there is no defect for settlement. Settlement is a common defect present at Curbs/Sidewalks adjacent to bridges. Are there any plans to add this defect code?

Answer:
Defect #8004 (Curb/Sidewalk Settlement) is in planned to be added.

Defects	Condition States			
	1	**2**	**3**	**4**
	GOOD	**FAIR**	**POOR**	**SEVERE**
Curb/Sidewalk Settlement (8004)	None.	Minor (≤ 1.5")	Moderate (>1.5") but does not warrant maintenance review.	The condition warrants a maintenance review to determine the effectiveness of sidewalk and curbs on the bridge; OR a maintenance review has been completed.

Resolution:
To be included in the commentary for all applicable elements in the NJDOT Bridge Inspection Manual and added to the CombIS system.