

NEW JERSEY DEPARTMENT OF TRANSPORTATION  
MEMORANDUM

**TO:** All Bridge Inspection Staff

**FROM:** *GR* Gregory T. Renman  
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**DATE:** March 12, 2012

**PHONE:** 609-530-3572

**SUBJECT:** Clarification on Culvert Definition and Proper SI&A and Pontis Reporting

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Some structures are not easily classified as a “bridge” or a “culvert”. These terms have distinct meanings that affect the layout of the bridge inspection report, as well as the coding of many SI&A and Pontis Items. This memorandum will attempt to provide a clear distinction between a culvert and a bridge in order to improve consistency in future reporting.

Note that the designation of “culvert” offers no indication of structure length. A structure that is equal to or less than 20 feet will be termed “Minor Bridge”, whereas a structure exceeding 20 feet will be termed “NBIS Bridge”. Culverts exist within both of these categories.

**A structure shall be classified as a culvert based on the following criteria:**

- When headwalls *do not* restrict the roadway width (SI&A Item 51), as shown in Figure 1 on Page 2. For this situation, the inspector shall treat the structure as a culvert for reporting in the SI&A and Field Notes. For load rating calculations, however, the inspector shall consider the structure in the same manner that it was designed.  
**Example:** a structure designed as a slab where the headwalls *are not* restricting the roadway width will be reported as a culvert in the Field Notes, SI&A, and Pontis but shall be load rated as a slab.

**OR**

- When the structure *is* designed hydraulically for peak flow (regardless of headwall location). This information, if available, would come from plans or design calculations, and cannot be determined from visual inspection.

**OR**

- When the structure *is* designed with a floor slab (regardless of headwall location).

**A Structure shall be classified as a bridge based on the following criteria:**

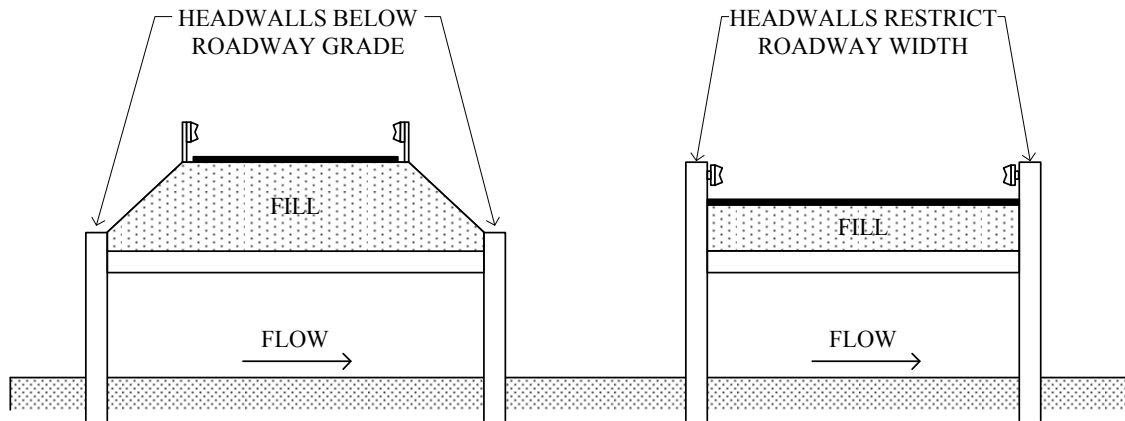
- When headwalls *do* restrict the roadway width (SI&A Item 51), as shown in Figure 2 on Page 2.

**AND**

- When the structure *is not* designed hydraulically for peak flow

**AND**

- When the structure *is not* designed with a floor slab



**FIGURE 1**

**FIGURE 2**

**Sample SI&A and Pontis Reporting Guidelines for Culverts <sup>1</sup>**

SI&A Item	Culvert Type		
	Culvert with fill	Culvert without fill <sup>2</sup> (no overlay)	Culvert without fill <sup>2</sup> (with overlay)
43b	19	19	19
51	Refer to Note <i>A</i> below	Refer to Note <i>A</i> below	Refer to Note <i>A</i> below
52	Refer to Note <i>B</i> below	Refer to Note <i>B</i> below	Refer to Note <i>B</i> below
58	N	N	N
59	N	N	N
60	N	N	N
62	Numeric Value	Numeric Value	Numeric Value
107	N	Numeric Value	Numeric Value
108a	N	Numeric Value	<b>6</b> - Bituminous overlay
108b	N	Numeric Value	Numeric Value
108c	N	Numeric Value	Numeric Value
AU	Refer to Note <i>C</i> below	Refer to Note <i>C</i> below	Refer to Note <i>C</i> below
Pontis Deck Elements	Not to be coded - N/A	Not to be coded - N/A	Not to be coded - N/A
Pontis Culvert Elements (240 - 243)	Refer to Note <i>D</i> below	Refer to Note <i>D</i> below	Refer to Note <i>D</i> below

<sup>1</sup> Field Notes shall include “Culvert” sheet rather than “Superstructure” and “Substructure” sheets. Choose “Deck” or “Roadway” sheet as required. See Note *F* below for additional details.

<sup>2</sup> Only applicable to either a Box Culvert *or* a Slab being reported as a culvert in accordance with this memorandum.

**Additional Notes:**

**A. Item 51 – Bridge Roadway Width, Curb-to-Curb**

1. Code 0000 where roadway is on fill carried across the structure and headwalls or parapets do not affect traffic flow
2. Code numeric value (XXX.X feet) where traffic runs directly on the top of culvert (or wearing surface) without fill (This will also apply where fill is minimal and headwalls or parapets affect the flow of traffic)

**B. Item 52 – Deck Width, Out-to-Out**

1. Code 0000 where roadway is on fill carried across the structure and headwalls or parapets do not affect traffic flow
2. Code numeric value (XXX.X feet) where traffic runs directly on the top of culvert (or wearing surface) without fill (This will also apply where fill is minimal and headwalls or parapets affect the flow of traffic)

**C. Four additional codes will be added to Item AU – Additional Structure Type, in order to satisfy the requirements of this memorandum. These will include:**

- N Arch coded as Culvert
- O Frame coded as Culvert
- P Slab coded as Culvert
- Q Other type coded as Culvert

**D. Pontis Element for Culvert shall be coded in accordance with the Pontis Coding Guide:**

- 240 Steel
- 241 Concrete
- 242 Timber
- 243 Other

**E. For any structures that were previously coded as Frames, Arches, Slabs, etc. that meet the criteria of a culvert as defined in this memorandum, due consideration shall be given to verify/update the Inspection Report and the SI&A and Pontis Coding, specifically:**

1. NBI Items 43b, 51, 52, 58, 59, 60, 62, 107, 108a, 108b, and 108c
2. State Items AM, AU, BF, BG, BH, and BJ
3. Pontis Elements for Superstructure, Substructure, Culvert, and Wearing Surface (Element 13)

**F. The Field Notes of the Bridge Inspection Report will need to be updated as per this memorandum. For instance, a bridge previously containing “Superstructure” and “Substructure” sheets, that will now be regarded as a culvert, will need to have the field notes adjusted. Rather than forcing the superstructure and substructure elements into the existing “Culvert” sheet, we will be leaving the Field Notes as-is, and simply relabeling the titles of the following sheets, as applicable;**

Existing Field Notes Sheet Title	Modified Field Notes Sheet Title
SUPERSTRUCTURE	CULVERT (SUPERSTRUCTURE)
SUPERSTRUCTURE (ARCH)	CULVERT (SUPERSTRUCTURE) (ARCH)
SUPERSTRUCTURE (RIGID FRAME)	CULVERT (SUPERSTRUCTURE) (RIGID FRAME)

SUBSTRUCTURE	CULVERT (SUBSTRUCTURE)
SUBSTRUCTURE (ARCH/FRAME)	CULVERT (SUBSTRUCTURE) (ARCH/FRAME)
SUBSTRUCTURE/SCOUR	CULVERT/SCOUR

Remember that in addition to changing the title of each applicable sheet, you will also need to change the Condition Rating in the upper-right hand corner of each sheet to represent Item 62 for Culvert (rather than Item 59 or 60). So for a Girder-type bridge that will be regarded as a culvert in accordance with this memorandum, the existing field notes sheets will not be changed except for the titles and condition ratings at the top of each applicable sheet.

At the bottom of each modified field notes sheet, include a note indicating that the field notes have been modified as per this memorandum (mention by name and date). See the modified Superstructure sheet below for example.

Structure No.: ####-### Route: ## Cycle No.: ##  
 Name: I ## over XX Road and XX River or Railroad Insp. Date: MM/DD/YYYY

→ **CULVERT (SUPERSTRUCTURE)** SI&A Item 62 Condition Rating: \_\_\_\_\_  
 SPAN # \_\_\_\_\_

RATING	COMPONENT	REMARKS
	## Girders/ Stringers/ Floorbeams/ Trusses/ P/S. Beams  (Girders numbered XXXX to XXXX)	
	Diaphragms / Cross Frames	
	Bearings	
	Deflection and Vibration	
	Others	

Additional  
Remarks:

**FATIGUE DETAILS**

Estimated percentage of Large trucks in ADT = ##%

Category	Detail Description and Location
N/A	

→ This Field Notes page has been modified in accordance with the NJDOT Memorandum entitled **Clarification on Culvert Definition and Proper SI&A and Pontis Reporting** dated March 12, 2012.

**G. The Inspection Report (specifically the Conclusion and Recommendations section) shall clearly specify the type of design (i.e. Box Culvert, Frame, Arch, Slab, etc.) for any structures that meet the criteria of a culvert as defined in this memorandum. The structure should be load rated according to the design type.**