



INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
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Michael R. Pence, Governor
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Commissioner

Bridge Inspection Memorandum No. 15-08

TO: All Inspection Personnel, Consultants

FROM: /s/Merril Dougherty
Merril Dougherty, PE
Bridge Inspection Manager
Bridge Division

DATE: 11-30-15

SUBJECT: Common Errors Noted During NBIS Metrics Field and Office Reviews

REVISES: N/A

SUPERCEDES: N/A

EFFECTIVE: Immediately

The following are the most common errors the FHWA Review Team has found while conducting its field reviews. All bridge inspectors need to review the list and make necessary changes to their documentation in order to improve the quality of bridge inspections.

1. Condition codes that are not supported by the narrative (notes, photos, sketches, etc.) in the inspection report.
 - a. In most cases, the deficiencies were either not documented thoroughly or were not identified. In a few instances, deficiencies were noted as critical findings by the review team but had not been identified as such by the NBIS routine inspection team.
 - b. The expectation/requirement: the lower the value of the condition code, the amount of documentation increases to thoroughly describe its location, extent and severity
 - i. Note if the deficiency is isolated or widespread
 - ii. Note the severity of the deficiency (e.g. how wide is the crack, how much section loss, etc.).
 - c. As condition worsens, also include photos, sketches, measurements, etc. The review team has rarely seen sketches attached to any LPA inspection reports in BIAS.
 - d. Sketches for cracking and delaminations of box beams that INDOT typically uses to support an updated load rating request is a best practice (See example below).

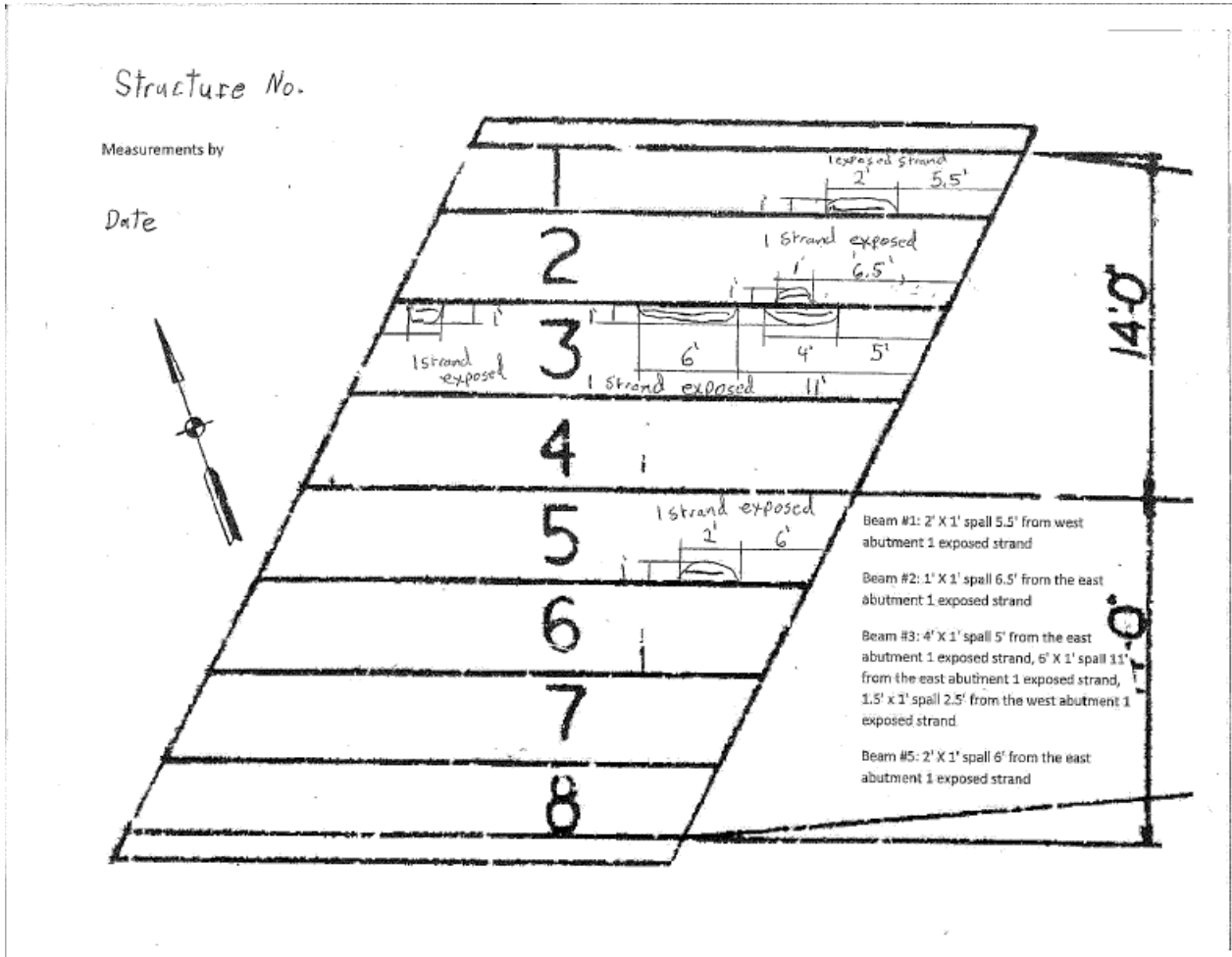


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2. The cross-section drawing included that are typically provided on the cover of the inspection report are often not an accurate depiction of the current channel conditions.
 - a. The drawings often do not give critical dimensions (i.e. dimension to bottom of spread footings; relation of stream bottom to bottom of spread footing)
 - b. The drawings often do not contain enough measurements to accurately document the current condition or depict deficiency.
3. Narrative for condition descriptions not using common language from the Coding Guide, MBE, or BIRM.
 - a. Do use language that supports Condition Ratings given in the Coding Guide
 - i. Discuss section loss, cracking, or spalling, etc.
 - ii. Minor versus advanced
 - b. Do not use language that does not support the component condition rating or is not common language. The following were noted as poor examples (e.g. "I changed the rating from 6 to 4 based on my inspection.", "Rating of 5 based on satisfactory condition.", "Beams continue to rust",



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“Rating of 5 based on discussion with supervisor.”, “In my professional opinion, rating is a 4.”,
“Bridge performing OK”, “Severe rust noted”, Bottom of bent exposed”, etc.)

4. Not performing a close-up inspection when notable deficiencies were noted. Inspectors must perform their inspections with enough detail to fully document the location, extent and severity of the deficiencies. Normal access equipment such as ladders, probes, etc. are expected to be available to the inspector during a routine inspection. If special access equipment is required to perform such inspection, the inspector may need to identify the deficiency for a special detail inspection or critical finding with the recommendation for a follow-up inspection.
5. Significant components of bridge file not uploaded in BIAS, namely: waterway Information, critical findings and actions, significant correspondence, and load posting documentation.
6. Critical finding reports not following the critical finding template from the Indiana Inspection Manual. Most notably:
 - a. Recommendation(s) for follow-up not being adequate or specific. For example, the review team noted the following actions as inadequate: “We plan to close the outside lanes until repairs can be made...”, “We recommend that the county close this bridge until a repair can be completed”, “The County was made aware of the situation”, etc. Recommendations must be specific in nature.
 - b. Not recommending a specific timeline for follow-up action. While not all recommendations can be pinpointed to a definitive timeframe, it is required that the inspector’s sense of urgency be conveyed in the recommendation. Examples: (1) Immediately, (2) within next 24 hours, (3) within next few days. The review team noted several urgent recommendations (i.e. post bridges at 3-5 tons; close lanes on the bridge, etc.) with no timeframe recommended. Some of these recommendations were not conveyed to the owner for up to 7 days after the finding was first noted; and in some cases the critical finding not addressed for up to another 3 days.
 - c. Close out actions and/or dates (when completed) not being reported in a timely manner. This will typically occur via a second report to INDOT CO. Inspectors are reminded that the intent of this item is to report the close out of the critical finding. For example, if the recommended action is to close this bridge until a repair or rehab can be completed, the close out action is the closing of the bridge. The timing of the repair or rehab, which may take days or months, is not part of the critical finding process.
 - d. Reporting the critical finding after the follow-up action has occurred. While this may occur for follow-up actions that are performed the same day as the finding, it is expected that findings be reported as soon as possible. The review team noted a few instances where findings were not reported to INDOT until 7-10 days after the inspection occurred. In at least one of those instances, the finding was not addressed in an appropriate timeframe.

The main reasons INDOT and FHWA review each Critical Finding:

- i. To ensure safety of the bridges: (1) by assessing if the recommended action(s) and timeline are commensurate with the seriousness of the finding; and (2) to determine if the recommended action(s) were completed; AND
- ii. To determine if trends exist.



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7. Approach Roadway Alignment (Item 72) has been found to be incorrectly rated a “6” or less under the following conditions:
 - a. Inspector notes the rating is based on “narrow bridge”. As noted in the Coding Guide, “Speed reductions necessary because of structure width and not alignment shall not be considered in evaluating this item.”
 - b. On roadways with a horizontal or vertical curve well in advance of the bridge. Although the roadway horizontal or vertical curve requires the vehicle to slow down, speed reductions that occur well in advance of the bridge shall not be considered in evaluating this item. As noted in the Coding Guide, “ It is not intended that the approach roadway alignment be compared to current standards but rather to the existing highway alignment...The basic criteria is how the alignment of the roadway approaches to the bridge relate to the general highway alignment for the section of highway the bridge is on.”
8. Photos not labeled and/or not described sufficiently. This is especially true when inspectors utilize photos to document a deficiency. When used as such, photo descriptions must describe the location, extent, and severity of the deficiency. Photo descriptions such as “photo #1”, “crack”, “scour”, etc. are insufficient.