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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

MEMORANDUM TO: Division Maintenance Engineers
Bridge Maintenance Engineers
Bridge Maintenance Supervisors

FROM: G. R. Perfetti, P. E.
State Structures Management Engineer

DATE: December 11, 2012

SUBJECT: PRIORITY MAINTENANCE & 501/502 DOCUMENTATION

In order to comply with FHWA guidelines it is necessary to provide an appropriate level of documentation for all repair work or other construction activities performed by State or contract forces. The WIGINS program has been updated so that all bridge and culvert construction and repairs can be fully documented electronically. In order to recognize capacity and condition improvements all structural repairs shall be documented in detail through the Priority Maintenance, Critical Find, 501/502 workflow in accordance with the following framework. Note that any repairs taken as safety measures shall also be documented.

STEP #1 - EXISTING CONDITION:

Prior to any work, photograph and describe the existing condition of the area being addressed. If the work is the result of a recent bridge inspection report, the documentation found in the report can be used for this step.

STEP #2 - REMOVAL:

Photograph and describe the extent of any removal of deteriorated material. Include any set up or special traffic control measures taken prior to demolition.

STEP #3 - PREPARATION:

Photograph and describe any preparatory work done to the remaining section prior to implementation of the repair. Take care to list and describe any special materials used such as chloride reducers, penetrating sealers, corrosion inhibitors, etc.

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STEP #4 – REPAIR:

Photograph the repaired section and describe the steps taken to complete the repair. Repair material types shall be documented. Follow up QA/QC procedures and reports should be attached to the form.

As a reminder, all plans for replaced bridges, superstructures or metal pipes installed by Division or contract forces shall be entered through the 501/502 documentation workflow. These installations must be inspected within 90 days of being put into service. However, in order to minimize traffic control costs and minimize inspection hazards it is preferable to complete this inspection before the structure is opened to traffic. Please notify the Structures Management Unit 30 days prior to the anticipated date of completion, so that this initial inspection may be properly scheduled.

The technical instructions for using this facility in WIGINS have been previously distributed. Procedural questions on the use of WIGINS should be directed to Walt Tallman or Lewis Gettier, Bridge Maintenance Systems Support.

Sample documentation framework examples are shown below. They are provided for illustration purposes and may not encompass all steps, or information, for similar work that is being documented. Also, note that there are many other situations that require 501/502 documentation. (Continue to address the Priority Maintenance and Critical Find item documentation in their workflow.) If there are any questions regarding the need to provide documentation, or the appropriate level of documentation for a particular situation, contact Tim Earp, Bridge Inspection Superintendent.

A. Epoxy Stone Overlay:

Photo #1: Photograph the existing deck surface after chain dragging and marking of delaminations. Note the deck wear, crack spacing and width.

Photo #2: Photograph deck after removal of delaminations and patches. List patch material used to repair delaminations and the average depth of the required repairs.

Photo #3: Photograph the prepared surface; describe shot blasting operations, if applicable, how cracks were sealed and the material used.

Photo #4: Photograph the finished overlay, list the epoxy type used and any special steps taken. Also document any problems that may have been encountered and how they were resolved.

B. Repair of Delamination/Spall in a Concrete Beam or Column:

Photo #1: Photograph the delamination/spall and document the location and size of area to be repaired.

Photo #2: After removing delamination and unsound concrete, photograph remaining section. Measure and document the extent of the removal, report the condition of the existing reinforcing steel and, if applicable, prestressing strands.

Photo #3: Photograph and describe surface preparation activities. List any chloride inhibitors or other materials used to coat either the reinforcing steel or concrete surface. If applicable, describe any repairs made to exposed reinforcing steel and/or prestressing strands.

Photo #4: Photograph the finished repair, list the patch material used and note special steps taken. Also document any problems that may have been encountered and how they were resolved.

C. Repair of Corroded Steel Beam End:

Photo #1: Photograph the area to be repaired and note the approximate height and length of the corroded portion of the beam to be repaired.

Photo #2: Note the traffic control measures used to complete the repair. Briefly describe the necessary beam jacking operation and photograph the beam end after the corroded portion of the beam end has been removed. Document the actual length and height of the removed section.

Photo #3: Provide a photograph and describe how the surfaces to be welded were prepared, e.g., how edges were beveled, backer plates used, etc.

Photo #4: Photograph the repaired section and document the coating material used to protect the finished repair. Provide ultrasonic testing report of the completed weld.

D. Repair or Splice of Timber Pile

Photo #1: Photograph the damaged/ decayed pile and document the location and dimensions of area to be repaired.

Photo #2: Photograph and describe shoring used to temporarily support bridge during timber pile splice or repair.

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Photo #3: After removing damaged or decayed timber to sound timber, photograph remaining section. Measure and document the extent of the removal and report the condition of the existing timber pile. List any preservative materials applied to the cut timber ends to inhibit decay.

Photo #4: Photograph and describe any materials used to reinforce the repair or splice. Document dimensions and thickness of steel collars; dimensions and reinforcing used for concrete encasement; or dimensions and information for other reinforcing methods.

Photo #5: Photograph the finished repair, list the patch material used and note special steps taken. Also document any problems that may have been encountered and how they were resolved.

cc: Division Engineers
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