

14-2.05 Bridge Plans, Preservation Project [Rev. Jan. 2013, Rev. Mar. 2016]

A Bridge Preservation project can include work activities classified as either preventative maintenance or rehabilitation. See Chapter 412 for types of preservation treatments considered preventative maintenance and treatments considered rehabilitation. The following may not be applicable to all Bridge Preservation projects and should be evaluated for each project individually.

Scour Analysis

Each Rehabilitation project crossing a waterway requires a scour analysis. The need for scour analysis for a Preventative Maintenance project should be determined in accordance with Chapter 412. The designer should contact the Bridges Division, Office of Hydraulics to determine if a scour analysis has been completed previously or should be completed as part of the current project. The determination should be documented in the Bridge Scoping Report (Rehabilitation project) or Initial Field Check Meeting Minutes (Preventative Maintenance project).

When a scour analysis is completed as part of the project, it must be signed, sealed, and dated by a professional engineer licensed in Indiana and submitted for review at least 30 days prior to the Preliminary Plans Submission. A template for documenting scour calculations is available from the Department's [Editable Documents webpage](#), under Hydraulics.

Load Rating

For a Preventative Maintenance project, the need for the existing load rating should be determined at the field inspection. Utilizing an LMC or other rigid overlay requires a load rating, but a polymeric or thin overlay does not. Other treatments that add significant deadload, e.g. replacing an aluminum railing with a concrete railing also require a load rating. For a Rehabilitation project a load rating is required regardless of the preservation treatment proposed.

The load rating request should be submitted via email to Coordinator 8 and the Bridge Load Rating Engineer copied. Relevant plans sheets that are too large to email should be uploaded to ERMS. The Load Rating Request Form and Load Rating Summary are available for download from the Department's [Editable Documents webpage](#), under Bridges.

Asbestos Report

An Asbestos Report is required for all Bridge Preservation projects. The designer should contact the project manager early in the development of the project to determine if the report is on file or must be completed. It is the responsibility of the District Bridge Inspection Engineer to complete

the Asbestos Report for each of the INDOT-maintained bridges within their district. For LPA projects the designer is responsible for coordinating the obtaining of the report with the LPA.

Environmental, Utilities & Railroads, and Right of Way

Each Bridge Preservation project is subject to NEPA and permitting requirements, utility and railroad coordination, and right-of-way acquisition requirements.

14-2.05(01) Initial Field Check and Bridge Scoping Report [Rev. Mar. 2016]

An initial field check and bridge scoping report should be completed for each Bridge Preservation project. For a Preventative Maintenance project, multiple bridges within a single contract may be submitted in the same report. For a Bridge Rehabilitation project, a report should be completed for each crossing. The content and format of the bridge scoping report will vary depending on the classification of the work as Preventative Maintenance or Rehabilitation. A template is available for the Bridge Scoping Report and Initial Field Check meeting minutes on the Department's website at www.in.gov/dot/div/contracts/design/dmforms/.

The following should be reviewed in accordance with Quality Assurance procedures and included as applicable in this submission.

1. Transmittal Letter. Identify any unique circumstances for the submittal, e.g. omitted items, the Responsible Person to receive the evaluation scores as well as any subconsultants and their work responsibilities.
2. Bridge Scoping Report. For a Preventative Maintenance project meeting minutes are submitted in lieu of the Bridge Scoping Report. See Section 412-2.01(02).
3. Level One Design Exception Request and Documentation. As required for Rehabilitation projects. Evaluation of Level One controlling criteria is not required for Preventative Maintenance, except for MOT. ADA and Bridge Railing should be evaluated in accordance with Sections 412-3.01(04).

Level One documentation is required for MOT for all Bridge Preservation projects.

4. Level Two Design Exception Documentation. As required for Rehabilitation projects. See Section 412-2.02. Evaluation of Level Two criteria is not required for Preventative Maintenance projects.

14-2.05(02) Scope-of-Work Approval [Rev. Mar. 2016]

Once the Bridge Scoping Report or Preventative Maintenance meeting minutes have been reviewed and approved, the designer will be requested to proceed to the Preliminary Plans submission.

14-2.05(03) Preliminary Plans Submission [Rev. Jan. 2011, Rev. Mar. 2016]

A preliminary plans submission is required for all Rehabilitation projects. For a Preventative Maintenance project, the need for a preliminary plans submission is at the discretion of the Bridge Rehabilitation reviewer.

Plans for multiple bridge rehabilitations which are complementary to plans for road work may be combined into one set of bridge plans. Plans for multiple bridge preventative maintenance projects may be combined into one set of bridge plans. The structure numbers and Des numbers for all such structures should be shown on the title sheet.

The following should be reviewed in accordance with Quality Assurance procedures and included in this submission.

1. Transmittal Letter. Identify any unique circumstances for the submittal, e.g. omitted items, the Responsible Person to receive the evaluation scores, as well as any subconsultants and their work responsibilities.
2. Plan Set, Rehabilitation project. Rehabilitation projects should be developed on full size sheets. See item 3 for a Preventative Maintenance project.
 - a. Title Sheet.
 - b. Index Sheet. Include the information as follows:
 - 1) an index of plan sheets (at this stage); and
 - 2) a revision table.
 - 3) a list of utility owners, addresses, contact names, and phone numbers or e-mail addresses.
 - c. Maintenance of Traffic (MOT) Details. The proposed MOT scheme and phasing should be outlined with preliminary details.

- d. Detail Sheets. These preliminary details should include, but not be limited to, typical cross sections, asphalt wedge details, guardrail details, and approach work details as appropriate.
- e. Layout Sheet. A Layout Sheet should be included when the rehabilitation work is significant enough to warrant a full survey or is part of a larger 4R project.
- f. General Plan Sheet. This sheet should include the following:
 - 1) plan view;
 - 2) elevation view;
 - 3) typical bridge cross section;
 - 4) design data relative to original design structural elements. The following note should be included:

Originally designed for ____ loading, in accordance with the AASHTO ____ Specifications, ____ Edition, and subsequent interims through ____ [year].

Design data for new elements, such as a new bridge deck, should be indicated separately;
 - 5) design loadings;
 - 6) suggested substructure type;
 - 7) minimum vertical and horizontal clearances;
 - 8) minimum low structure, Q100, flowline, low water and ordinary high water mark elevations, as available;
 - 9) related general notes;
 - 10) general rehabilitation recommendations including, but not limited to, legend, material notes, and required stormwater- pollution-prevention retrofits; and

11) all recommendations outlined in the Bridge Scoping Report.

3. Plan Set, Preventative Maintenance project. Preventative Maintenance projects may be developed on letter-sized plan sheets. If a Preventative Maintenance project utilizes full size plans, the plan sheet development should be in accordance with item 2 above.

a. Title Sheet.

1) Project Description. The project description should include the work type, e.g., Polymeric Overlay and Joint Repair.

2) Project Location Maps. Include a State map, hatching the various counties included in the project and note the INDOT district. A separate project location map or enlarged detail should identify general locations of the various structures within the counties.

3) Bridge Index Table. The table should summarize the list of structures, including des. number, bridge file number, and county.

4) Contract number. The contract number should appear in the upper right hand corner of the sheet. This allows the number to be visible when the contract book is printed and bound.

5) Standard Specifications Reference. Indicate which version of the Department's *Standard Specifications* apply to the project. The *Standard Specifications* are published every two years.

6) Signature Block and Professional Engineer's Seal. The engineer's seal, signature of the engineer, and date signed is required on each sheet for consultant-developed plans and on the title sheet and detail sheets for in-house-developed plans. The seal may vary within the plan set depending on which engineer prepared the sheet. For the title sheet, "Indiana Department of Transportation", should be shown under the Approved for Letting signature line.

b. Project Location Sheet. This sheet is a tabled summary of structures, including des number, structure number, route and facility crossed, and location (referenced from the nearest State route, US route, or interstate), latitude and longitude, reference post and county.

- c. Work and Quantities Sheet. This sheet identifies the work to be completed for each structure, references to applicable details within the plans, reference to applicable maintenance of traffic *Standard Drawings*, and an estimate of quantities.
 - d. Detail Sheets. Include preventative maintenance treatment details and maintenance of traffic details not covered by the *Standard Drawings*
- 4. All Project Commitments Report. The All Project Commitments Report is generated from the Commitments Database. Information on accessing the Commitments Database and other project commitments documents are available at <http://www.in.gov/indot/2731.htm>.
 - 5. Level One Controlling Criteria Checklist and Design Computations. For a Preventative Maintenance project, a Level One controlling criteria checklist is required only for MOT. ADA and Bridge Railing Test Level should be addressed in accordance with Section 412-3.01. For a Rehabilitation project, the checklist is required for both the permanent condition and MOT.

If there are no changes to the plans which affect Level One controlling criteria since the prior submission, it is acceptable to submit the previous checklist and initial and date next to the statement that no changes have been made to the plans that affect Level One controlling criteria. See Section 40-8.02. A checklist should be prepared for each phase of the proposed MOT.
 - 6. Traffic Control Plan Checklist. The checklist will be incomplete at this stage, but should reflect MOT decisions from the initial field check.
 - 7. Scour Analysis Memo. Include the approval letter from the Office of Hydraulics, where applicable.
 - 8. Unique Special Provisions. Begin coordination for unique provisions and unique pay items. Unique provisions should be reviewed by the Specifications Engineer prior to the Final Plans submission.
 - 9. Proprietary Materials. Submit justification for the use of proprietary materials. See Chapter 17.
 - 10. Cost Estimate.

11. Permits Determination Request. For both Rehabilitation and Preventative Maintenance projects, the designer should coordinate with the Waterway Permitting Office to establish the need for a permits determination and items to be submitted.

Additional Preliminary Plans Information

The designer should coordinate with the project manager to have preliminary plans reviewed by the Division of Utilities and Railroads.

Upon approval of the preliminary plans a geotechnical investigation request should be submitted. If a geotechnical investigation is not required a Geotechnical Waiver should be obtained.

Upon completion of the preliminary plan review and NEPA approval, required permit applications should be completed and submitted to the Environment Services Division for review. Information on permit application requirements and permitting time frames are included in the *Indiana Waterway Permits Manual*, at: <http://www.in.gov/indot/2522.htm>.

14-2.05(04) Final Plans Submission [Rev. Jan. 2011, Rev. Mar. 2016]

The following should be reviewed in accordance with Quality Assurance procedures and included in this submission. Information required for the Preliminary Plans Submission should be included in this submission, if not previously submitted.

1. Transmittal Letter. Identify any unique circumstances for the submittal, e.g. omitted items or items that are not applicable, the Responsible Person to receive the evaluation scores as well as any subconsultants and their work responsibilities.
2. Response to Comments. Include the Preliminary Plans comment letter and marked up plans with responses to all comments. These items should be combined into a single document.
3. Plan Sheets. Ensure plan sheets required in previous submittals are included as applicable. The Final Plans should include specific measures proposed by the Railroads, Utilities, Environmental, Geotechnical, or Hydraulics offices. The following additional sheets should be included as applicable.
 - a. Soil Borings Sheets.
 - b. Maintenance of Traffic (MOT) Details. Finalize MOT details.

- c. Detail Sheets. All necessary plans details required to adequately define the required repairs. Details could include, but not be limited to, floor details, superstructure details, substructure details, railing details, reinforced-concrete bridge approach details, and temporary erosion- and sediment-control measure details.
 - d. Tables. Include a bridge summary, guardrail summary and other tables as applicable.
- 4. Quantity Calculations. Finalize all quantities. Designer and checker initials and date should be shown on each sheet.
 - 5. Design Computations. Finalize design computations. Designer and checker initials and date should be shown on each sheet. Include the Hydraulics Approval and Scour memos from the Office of Hydraulics, where applicable.
 - 6. Cost Estimate. Conduct a detailed review to ensure that all necessary pay items have been included.
 - 7. Special Provisions. Complete the special provisions menus and include unique special provisions for non-standard pay items. Unique special provisions should be reviewed by the Specifications Engineer.
 - 8. Geotechnical Report. Include the report or indicate its location within ERMS in the transmittal letter.
 - 9. Geotechnical Review of Final Check Prints Form. This form is available for download from the Department's [Editable Documents webpage](#), under Geotechnical. For projects for which the geotechnical investigation was performed by a consultant, note on the Transmittal Letter that the plans and the form have been transmitted to the geotechnical consultant. For projects for which the geotechnical investigation has been performed by the Department, the form, with plans, should be uploaded into ERMS for review by the Office of Geotechnical Services.
 - 10. Foundation Review Form. This form is available for download from the Department's [Editable Documents webpage](#), under Bridges.
 - 11. Environmental Document. Indicate the status or the location within ERMS in the transmittal letter.

12. Environmental Consultation Form. This form is available for download from the Department's [Editable Documents webpage](#), under Environmental.
13. Permits. Approved permits do not need to be submitted for review, but all necessary permits should be applied for. The status of permits should be indicated on the Environmental Consultation Form.
14. All Project Commitments Report. The All Project Commitments Report is generated from the Commitments Database. Information on accessing the Commitments Database and other project commitments documents are available at <http://www.in.gov/indot/2731.htm>. All known resolutions should be included.
15. Level One Controlling Criteria Checklist and Design Computations. For a Preventative Maintenance project, a Level One controlling criteria checklist is only required for MOT. ADA and Bridge Railing Test Level should be addressed in accordance with Section 412-3.01. For Rehabilitation projects, the checklist is required for both the proposed condition and the MOT. If there are no changes to the plans which affect Level One controlling criteria since the prior submission, it is acceptable to submit the previous checklist and initial and date next to the statement that no changes have been made to the plans that affect Level One controlling criteria. See Section 40-8.02. A checklist should be prepared for each phase of the proposed MOT.
16. Load Rating Memo. Include the Load Rating Approval Memo
17. Proprietary Materials. Include approved request for the use of proprietary materials. See Chapter 17. Approved proprietary material justification is required for proprietary materials that have federal participation.
18. Asbestos Report.

14-2.05(05) Final Field Check [Rev. Mar. 2016]

A final field check is at the discretion of the project manager in consultation with the Bridge Rehabilitation review upon completion of the final plan review. The purpose of the field check should be as follows:

1. to confirm the condition of the structure and appropriateness of the plans; and
2. to allow the district representative to review the MOT scheme and construction procedures.

The attendees from the initial field investigation should be invited to the final field check.

All corrections noted at the final field check should be included in the Final Tracings Submission.

The Constructability Review at this stage is at the discretion of the the project manager. See the *Constructability Guide Book* at <http://www.in.gov/indot/2697.htm>. At the discretion of the project manager, constructability and utility items may be discussed at the final field check and documented the Final Field Check Minutes.

14-2.05(06) Final Tracings Submission

All revisions resulting from the Final Field Check and Final Plans review will be completed for this submission. See the requirements listed in Section 14-1.02(04).

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