

NOTE: This chapter is currently being re-written, and its content will be included in Chapter 103 and the INDOT CAD Standards Manual in the future.

CHAPTER 14

Plan Preparation

Design Memorandum	Revision Date	Sections Affected
13-01	Jan. 2013	14-1.02, 14-2.03, 14-2.05, 14-2.09
13-11	May 2013	14-2.04(01), 14-2.04(09), Figure 14-1E(1), Figure 14-1E(2)
14-13	Sep. 2014	Figure 14-1E, 14-1E(1), 14-1E(2) and 14-1E(3) (del.)
15-01	Feb. 2015	14-01.02(04), Figure 14-1C (del.)
15-05	Mar. 2015	14-1.02(06)
16-07	Mar. 2016	14-1.02(02), 14-1.02(04) through 14-1.02(07)
16-08	Mar. 2016	14-1.02(08)
16-13	Mar. 2016	14-2.05
16-37	Nov. 2016	14-1.02(05)
17-06	Apr. 2017	14-2.05(04), 14-2.04(09)
17-12	May 2017	14-2.04(06), 14-2.04(09)

17-25	Nov. 2017	14-1.02, 14-2.04(09), 14-2.05, 14-2.05(04)
18-02	Feb. 2018	14-2.04, 14-2.05
18-04	Feb. 2018	14-1.02(02)
18-23	Oct. 2018	14-1.02(02), 14-1.02(03), 14-1.02(04), 14-2.0, Figure 14-1D (Del.)
19-09	Sep. 2019	14-1.02(05)
20-05	Apr. 2020	14-2.01(07), 14-2.03(03), 14-2.04(06), 14-2.05(03)
20-06	May 2020	14-2.04(09), 14-2.05, and 14-2.05(04)
20-17	Sep. 2020	14-1.02(05) thru 14-1.02(07), Figures 14-1H thru 14-1N (New)
20-18	Sep. 2020	14-1.02(08)
20-19	Sep. 2020	Figure Placeholder Removal for Figures 14-1C thru 14-1E(3)
21-06	Mar. 2021	14-2.04 & 14-2.05
21-07	Mar. 2021	14-1.02(09) (new), 14-2.06, 14-2.07, and 14-2.08
21-08	Mar. 2021	14-1.02(03), 14-2.01(01), 14-2.01(03), 14-2.01(05), 14-2.01(07) thru 14-2.01(09), 14-2.01(11), 14-2.01(12), 14-2.02(01), 14- 2.03(01), 14-2.03(03), 14-2.03(10), 14-2.04(01), 14-2.04(02), 14-2.04(04), 14-2.04(06), 14-2.04(09), 14-2.05(01), 14- 2.05(03), 14-2.05(04), 14-2.06(01) thru 14-2.06(03), 14- 2.07(01) thru 14-2.07(03), 14-2.08(01) thru 14-2.08(03)
21-17	Jun. 2021	14-1.02(04), 14-1.02(06), 14-2.01(12) thru 14-2.01(14), 14-2.03(01), 14-2.03(14), 14-2.03(15), 14-2.04(09), 14-2.05(03), 14-2.05(04), 14-2.06(03), 14-2.07(03), 14-2.07(04), 14-2.08(03), Figure 14-1K (Rev.), Figure 14-1L (Del.)
21-18	Sep. 2021	14-2.05
21-19	Sep. 2021	14-2.01(09), 14-2.05, 14-2.05(03) thru 14-2.05(07)
21-25	Dec. 2021	14-2.01(07), 14-2.01(12), 14-2.04(06), 14-2.04(09), and 14-2.05(05)
22-01	Jan. 2022	14-2.01(07), 14-2.04(06), 14-2.05(03), 14-2.06(02), 14-2.07(02), and 14-2.08(02)

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CHAPTER 14

PLAN PREPARATION

Other Parts of this *Manual* provide the designer with uniform criteria and procedures for the design of a highway facility. A design must be incorporated into the construction plans so that it can be clearly understood by contractors, material suppliers, and Department personnel assigned to inspect the construction of the project. An example is that if more than one plan and profile sheet is required, information overlaps of approximately 100 ft should be shown from the previous sheet to the next sheet. To ensure a consistent interpretation of the construction plans, individual sheets should have a standard format and content, and the sequence of plan assembly should be the same. This chapter provides the general information in conjunction with the Project Development Process (PDP) necessary to prepare a complete set of construction plans for a road, bridge, traffic-signs, signalization, or lighting project. Chapter 85 discusses criteria for the preparation of right-of-way plans. In addition to the information provided in this Chapter, the [*INDOT Typical Plan Sheets*](#) provides sample construction plans sheets and guidance on what information should appear on each sheet.

14-1.0 PLAN DEVELOPMENT

14-1.01 Responsibilities

Figure [14-1A](#), Sheet Preparation Responsibilities for Road, Bridge, or Traffic Project, illustrates who is responsible for preparing the details for an in-house designed project. For consultant-designed plans, the consultant will be responsible for the preparation of all plans. Minor, or baby, projects related to signs, lighting, or signals should be combined into one generic traffic project, which is associated with the lead project.

The designer will initially complete all plans sheets, computation sheets, quantity estimates, and cost estimates. A second qualified individual will independently review these documents. The qualifications of the reviewer should be commensurate with the item to be reviewed. For example, a second drafter should be qualified to check the preliminary drafting, but an engineer will be required to review the structural details and computations for a bridge design.

At a number of design stages the plans will be submitted to various Department units for review. Section 14-2.0 identifies the construction plans sheets that should be completed at each design stage.

Prior to these submissions, the project manager is responsible for ensuring that all appropriate information has been incorporated onto the plans or is included with the plans; the plans are consistent; all comments from previous submittals have been addressed; all calculations have been checked; and the overall content satisfies the Department's criteria.

14-1.02 Project Development [Rev. Jan. 2013, Nov. 2017]

The Project Development Process documents the information necessary to equitably and systematically advance a project from the end of planning to the beginning of construction for a traditional design-bid-build project. Using this process will ensure that all appropriate information will be addressed in the construction documents. Alternative methods of procurement such as design-build will include the project development requirements within the technical provisions.

14-1.02(01) Project Initiation

The Office of Planning and Programming is responsible for preparing the Engineer's Report. This Report provides the scoping information the designer needs to initiate the project design.

Prior to beginning design on an existing facility, the designer should review the as-built plans or the final design plans for that previous work. Final design plans are on file, on microfilm, in the Planning Division's Research and Documents Library. The actual as-built plans or microfilm are located in the appropriate district office. The district office is responsible for correcting the final design plans to reflect the as-built conditions.

Although the as-built plans are an important resource, the designer will conduct a field review or have a survey conducted for each road or bridge project. Section 14-3.0 discusses how to incorporate the survey data into the construction plans. For most traffic signing, signalization, or lighting work, a survey will not be performed. However, a field review will be required.

If the design requires a deviation from an INDOT *Standard Drawing*, it may be handled by either of the methods as follows.

1. A detail is included in the plans.
2. Reference is made to an INDOT *Standard Drawing*, which is not applicable to the situation, but is warranted anyway. For example, Standard Drawing 610-DRIV-05 is applicable if the mainline shoulder is paved and 8 ft or greater in width. In a restricted situation, it may be appropriate to have the drive constructed in accordance with 610-DRIV-04 instead. In this situation, it will be sufficient to add a note in the Pavement Quantities and Approach Table's Remarks column, as follows: *Construct in accordance with Standard Drawing 610-DRIV-04.*

The designer of a lead project should coordinate the combining of multiple projects into one contract. The pay items should be consistent (e.g., if one has QC/QA pavement, the other must also use QC/QA pavement if not otherwise warranted). If there is no lead project (i.e., two independent bridge replacement projects), the INDOT designer or project manager should coordinate the combining of the projects into one contract.

14-1.02(02) Plan Submittals and Quality Assurance [Rev. Oct. 2018]

Plan Submittals. Items to be reviewed at each plan development milestone should be submitted electronically to the Electronic Records Management System (ERMS) via the INDOT Technical Assistance Pathway (ITAP). The designer should notify the appropriate coordinator, project manager, and other offices as appropriate by e-mail. Additional information is available from the Department's [Designers webpage](#), under Design Submittal.

Quality Assurance. Quality control measures should be an integral part of the design process. Computation sheets and drawings should be initialed by the individual who completed the work and by a second qualified individual who checked the work. The qualifications of the checker should be commensurate with the work being reviewed.

Checklists for the various project types are included in Section 14-2.0. Their purpose is to provide a minimum list of items that are to be independently reviewed prior to submittal. The checklists

are intended as a guide and are not all inclusive. They should not be interpreted as a checklist of drafting and design items to be included on the plans. Items in the checklist that are not included or addressed in accordance with a given submittal should be identified in the transmittal letter with a brief explanation of the omission.

All submittals are evaluated in accordance with the INDOT Performance Evaluation Guidelines. Additional information, including how to find performance evaluation criteria, is available at https://www.in.gov/indot/doing-business-with-indot/files/INDOT_CPE_Guidelines.pdf

14-1.02(03) Field Check Stage [Rev. Oct. 2018, Mar. 2021]

The designer is responsible for preparing and distributing plans for each field check. This will consist of the following:

1. **Scheduling Field Check.** The designer is responsible for setting the field check date. The designer must coordinate this effort with the project manager and the district area engineer so that all the appropriate personnel can attend.
2. **Notification and Plan Distribution.** The designer is responsible for preparing the field check notification letter and submitting electronic plans so that they are received by all parties on the distribution list at least two weeks prior to the field check. The designer should strive for all plans to be distributed electronically. Utilities or other parties not able to accept electronic plans may require the transmission of paper copies. A Field Check Notification form shall be filled out by the designer. An editable version of this form may also be found on the Department's [Editable Documents webpage](#), under Design Submittal.

**** PRACTICE POINTER ****

For work in Gibson, Posey, Vanderburgh, or Warrick county, a copy of the plans and notification letter should be sent to EUTS (Evansville Urban Transportation System). This information is shown on the distribution list on the Designer Forms webpage, at www.in.gov/dot/div/contracts/design/dmforms/.

3. Traffic Control Plan Checklist. Maintenance of traffic strategies and plan components should be coordinated with the district Traffic Engineer and Area Engineer, if applicable the Transportation Management Plan (TMP) Team. See the Department's [Editable Documents webpage](#), under Traffic Maintenance (MOT) for the Traffic Control Plan Checklist. Include the checklist as part of the field check report. See Section 503-3.0 for temporary traffic control plan design information.

4. Field Check Report. After the field check has been completed, the designer will be responsible for preparing a report of the meeting and listing the comments from all individuals involved in the field check. Copies of this report will be electronically distributed to all those involved in the field check and to those individuals listed in the distribution in the Field Check Notification form. An editable version of this form may also be found on the Department's [Editable Documents webpage](#), under Design Submittal.

14-1.02(04) Final Tracings Submittal [Rev. Oct. 2018, Jun. 2021]

All final tracings documents, except unique special provisions, should be submitted electronically into ERMS in accordance with Section 14-1.02(02). It is the responsibility of the designer handling a lead project to ensure the tracings for all kinned projects are brought together and submitted to the project manager. The project manager is responsible for submitting the Final Tracings package to the Contract Administration Division.

Documents for final tracings are shown on the Final Tracings Checklist. Failure to submit items marked "Letting Date Critical" may affect the letting date. The Final Tracings Checklist, including established naming conventions and instructions, is available on the Department's [Editable Documents webpage](#), under Design Submittal.

Final tracings which have been developed in metric units will not be accepted.

The plans, except cross sections, must be sealed, signed, and dated by a professional engineer licensed in Indiana.

14-1.02(05) Contract Information Book Certification [Rev. Mar. 2016, Dec. 2016, Sep. 2019, Sep. 2020]

The Designer should receive the Contract Information Book (CIB) from Contract Administration staff via email for review prior to advertisement. The Designer should complete the review within three business days of the initial request. The CIB Certification form should be completed and returned via email to the requestor.

Preprint changes identified during the review should be processed in accordance with Section [14-1.02\(06\)](#).

14-1.02(06) Changes to the Final Tracings Submission [Rev. Mar. 2016, Sep. 2020, Jun. 2021]

The procedure for making changes to contract documents and plans after the Final Tracings submission has been transitioned to Contract Administration varies. Changes will be processed as Preprint Changes or Revisions, depending on the request date relative to advertisement.

1. Preprint Changes. Preprint changes are changes made to contract documents 7 days or more prior to advertisement. Letting advertisement (Notice Posted) is typically 30 days prior to the letting date. The 10-year Letting Preparation Schedule is available at <http://www.in.gov/dot/div/contracts/letting/lettingdates.htm>.

Preprint changes are not accepted less than 7 days prior to advertisement, unless exceptions are made by Contract Administration. If an exception is desired, it is recommended to submit the inquiry to the PS&E Coordinator and Estimating Planner within the Contract Administration Division prior to making a Preprint Change.

- a. Plan Set Changes. Preprint changes to plans should be submitted electronically to ERMS. When changes are made to the originally submitted plans (new, revised, or deleted sheets), the existing set of plans in ERMS should be identified for deletion and a new complete set of plans should be uploaded. The plans should not include clouds or revision blocks. Once uploaded, the Designer should notify the District Coordinator and copy the Project Manager. In the notification email, the Designer should specify which ERMS document DOT number is the replacement file and which is to be deleted. District Coordinator contact information can be found in the

ERMS Information document which is available from the Designers Webpage <https://www.in.gov/indot/2731.htm> under Design Submittal.

The file naming format is the same as that of the original submission.

Example: FT Plans or PlansXsect [Des. No.] for Contract Services.

Adequate time must be allowed for transitioning files within ERMS, i.e. documents submitted 7 days prior to advertisement may not reach Contract Administration the same day.

- b. All Other Contract Documents. Preprint changes to contract documents, except for plans, are submitted via email to the PS&E Coordinator and Estimating Planner within the Contract Administration Division.

Revised documents should be marked up and submitted in their original submission format. All additions must be highlighted clearly. All deletions must be marked in red and struck through as appropriate. Track Changes is not an acceptable markup format for Word documents.

Exceptions to the preprint changes direction given above are as follows:

- (1) Estimate (Est) should be marked up from the Detailed Cost Estimate PDF, which can be provided by contacting CESsupport@indot.in.gov. Do not update the live file in CES or markup the original CES PDF, even if the Designer still has access to do so. See Figure [14-1H](#), Example Detail Cost Estimate Preprint Correction.
- (2) Special Provisions Menu (SplProvMenu) should be submitted as a complete PDF markup. Annotate any additions or deletions in the pdf itself, as the Excel menu is locked for formatting changes. See Figure [14-1I](#), Example Special Provisions Menu Correction.
- (3) Special Provisions (SplProv) should be submitted as a complete Word document markup. Do not only provide the specifications you wish to add; instead, amend the full, original Word document. Do not include section or column breaks. See Figure [14-1J](#) and [14-1K](#) for SplProv correction.

- (4) Unique Special Provisions (USPs) should be submitted through SharePoint, which is accessible from the INDOT_UniqueSpecialProvisions Team via Microsoft Teams. Preprint changes to USPs submitted via other methods will not be accepted. See Chapter 19 for information on the USP submittal and review process.
- (5) Other Miscellaneous CIB corrections should be included as a pdf, including only the page excerpts necessary to illustrate the corrected sheet(s). Ancillary items, such as page number or table of contents updates, will be automatically accounted for and do not require markup. See Figure [14-1M](#), Example CIB Preprint Correction.

A duplicate set of preprint markups is not required for Final Tracings documents that are reflected directly in the CIB. For example, changes submitted for SplProvs need only be submitted as a SplProv change and does not also require a CIB markup as described in Note 5 above. The CIB will be updated to reflect these document changes by Contract Administration staff.

2. Revisions. Revisions are changes to Final Tracings documents or CIB contents that occur near or after advertisement, but before letting. Revisions must be submitted no later than 5 business days in advance of the letting date.
 - a. Revisions to documents, including plan sheets, CIB proposal pages, pay items, provisions, etc. must be transmitted to the district Area Engineer for review and approval. The INDOT Project Manager can verify the specific Area Engineer. The requested changes should be clearly indicated and marked up in a similar fashion to Preprint Changes (see Section 14-1.02(06) 1.b), where applicable.
 - b. Upon approval, the district Area Engineer should transmit the completed Request for Contract Revision form and the new or revised contract documents or plan sheets to Contract Administration. The form is available for download from the Department's [Editable Documents webpage](#), under Contract Administration.
 - c. Changes to the contract information book (CIB) and estimates should be marked in the same manner as preprint changes, see Item 1 above, exception that the marked-up Schedule of Pay Items is also required. See Figure [14-1N](#), Example CIB Schedule of Pay Items Correction.

- d. USP changes are NOT routed through SharePoint for revisions. The process to revise, add, or remove USPs should follow the same process as item 2a above.
- e. Changes to plan sheets should be uploaded into ERMS.

- 1) The Designer should upload only the new or revised sheets, including the index sheet. The Designer should notify the district coordinator and copy the district Area Engineer.
- 2) The file naming convention for both a partial and complete set of plans is the same as that of the original submission:

Example: FT Plans or PlansXsect [Des. No.] for Contract Services.

- 3) A revision note should be placed in the revision block on the Index Sheet when plan sheets are revised. The revision note should include the date of the revision, the revised sheet numbers, and a short description of the change. The revision block should be clouded. Do not include a revision number in the revision block as the number may not correspond sequentially to the Notice of Revision number for the contract as a whole.
- 4) A revision note should be placed on the revised sheet in a location that will not restrict its visibility. The revision note should include the date and a description of the change. The revision and the revision note should be clouded.
- 5) Original plan sheets, other than the Title Sheet, may be replaced with new sheets and numbered exactly as the original deleted sheets, with the original sheets discarded. New sheets that were not in the original plan numbering that are inserted into an original set of plans will be numbered with a numeric extension as follows. Clouds are not required around the periphery of the new sheet.
 - 1. A new sheet inserted after 22 and before 23, should be numbered 22-1.
 - 2. Three new sheets inserted after 13 and before 14, should be numbered as 13-1, 13-2, and 13-3.

3. A new sheet at the end of a 40-sheet set of plans should be numbered as 40-1.

Adequate time must be allowed for transitioning files within ERMS, i.e. documents submitted 7 days prior to letting may not reach Contract Administration the same day.

3. Changes Requested Less Than 5 Business Days Prior to Letting. **NO CHANGES** are allowed less than 5 business days prior to letting. The letting date, not the plan signing date, controls when and how revisions can be made to the plans.

14-1.02(07) Construction Change [Rev. Mar. 2016, Sep. 2020]

A construction change is made to a set of plans or contract documents following the project letting and subsequent awarding to a contractor.

All construction changes should be submitted electronically into ERMS using the Construction Changes Document Management System link in ITAP. Instructions on how to request access to the application are available at <https://itap.indot.in.gov/login.aspx>.

The file naming format is as follows: [Submittal] [Description] [Des No.] for Contract Services.

Example: ConstChg#1 Plans 0900010 for Contract Services

After the files are uploaded, notify the coordinator, project manager and the Research & Documents Library Team that the construction change has been submitted. After the review process, the Research & Documents personnel prepare a Construction Change Memorandum and the revised plans and documents for distribution. The Construction Change Memorandum template is available for download from the Department's Design Manual [Editable Documents webpage](#), under Contract Administration.

A construction change is processed as follows.

1. Transmittal Letter. A transmittal letter is required and should be attached to the email notification to the coordinator.

2. Plan Revisions. Where a change is made to the final tracings, a revision note should be placed in the revision block on the index sheet. This revision note should include the date of the revision, the revised sheet numbers, and a short explanation of the change. A note with the same information should also be placed on the revised sheet or sheets in a location that will not restrict its visibility. Do not include a revision number in the revision block as the number may not correspond sequentially to the Notice of Revision number for the contract as a whole.

No deletions may be made to the original tracings, as they are considered a legal contract document at the time of letting. If space allows, the original item to be revised should be hatch-marked through and the revision should be made on the same sheet. If the revision is too large to be shown on the original sheet, the deleted sheet number should be noted in the revision block. This deleted sheet will remain in the original set of plans. The deleted sheet does not need to be included in the revised plan sheets file uploaded to ERMS. Only the index sheet and revised sheets should be included in the revised plan sheet file.

- a. Replace an existing plan sheet. If an existing plan sheet is to be replaced, the replacement sheet should be numbered with an alphabetic extension (number-letter) to indicate that it is a replacement sheet. The deleted sheet should be identified in the revision block and will remain in the original plan set for future reference. Clouds should be used on the replacement sheet to indicate the changes made. Clouds are not required around the periphery of the replacement sheet. Do not include a revision number in the revision block as the number may not correspond sequentially to the Notice of Revision number for the contract as a whole. Identify the replacement sheet number in the revision block on the index sheet. Examples of the number-letter extension are as follows.

- 1) Sheet 2 is deleted and Sheet 2-A will take its place.
- 2) Sheet 23 is deleted and Sheet 23-A will take its place.
- 3) Sheet 17-A is deleted and Sheet 17-B will take its place.
- 4) Sheet 15-1 is deleted and Sheet 15-1-A will take its place

The number followed by a letter indicates that an existing sheet has been replaced.

- b. Insert a new plan sheet. If a new sheet is to be inserted into the original plans, the added sheet should be given a numeric extension, number-number, to indicate that

it is an added sheet. A new sheet is numbered according to the sheet preceding the insertion. The added sheet should be identified in the revision block on the index sheet. Clouds are not required around the periphery of the new sheet. Examples of the number-number extension are as follows:

- 1) Sheet 15-3 is inserted after Sheet 15-2 and before Sheet 16.
 - 2) Sheet 7-1 is inserted after 7-B and before Sheet 8.
 - 3) Sheet 40-3 is inserted after 40-2 at the end of the set of plans.
 - 4) Sheet 5 is revised and two new sheets are added. The sheet numbers are 5A, the revision to Sheet 5, 5-1, and 5-2, the two new sheets.
3. Quantity Revisions. The designer computes quantity revisions and indicates the changes on a copy of the schedule of pay items from the contract information book. The designer should show revisions by striking through the original quantity and placing the new quantity next to the old quantity and clouding all. For deleted items, strike through the quantity, show a “0”, and cloud all. Add new items at the end of the schedule, with item descriptions, including item numbers, quantities, and units, and cloud all. The marked up document will be submitted electronically into ERMS. Mark ups should use the same process as described for preprint changes to a contract document, Section 14-1.02(06).
4. Special Provision Revisions. The designer should indicate which special provisions were deleted, revised, or added by marking up a copy of the special provisions index which is contained in the contract information book. When a special provision is deleted, strike through and cloud the title on the index. If it is revised, strike through the original title and place the new title next to the old title and cloud the entire title. If there is an addition, add the title to the end of the index and cloud it. The marked-up index revised special provisions, with additions and struck-through text for deletions with both clouded, or new special provisions will be submitted electronically as PDF files. The submittal into ERMS should be the same as shown for the Plan Revisions, see Item 2 above.

Revisions to items that are not contract documents, e.g. design computations, design exceptions, should not be uploaded as construction changes. These items should be uploaded into ERMS using the Preprint Changes process, Section 14-1.02(06).

The designer should notify the coordinator and the project manager of these revisions.

Any document uploaded as a construction change is placed on the web once released by the Research & Documents Library team. Documents uploaded as construction changes can be viewed by the public or construction personnel via the web.

14-1.02(08) Shop Drawings and Falsework Review Procedure [Mar. 2016, Sep. 2020]

Working drawings as defined in the INDOT *Standard Specifications* include supplementary bridge plans, stress sheets, shop drawings, erection plans, falsework plans, framework plans, cofferdam plans, bending diagrams for reinforcement, or any other supplementary plans, detailed drawings, design drawings, or similar data which a contractor is required to submit for approval.

The Designer's responsibilities for review of shop drawings and falsework are given in the [LPA & State Shop Drawing & Falsework Review Procedure](#), located on the INDOT Construction Information webpage, under Construction Management Resources.

14-1.02(09) Traffic Signal, Signing, and Lighting Review Procedure [New Mar. 2021]

A separate electronic submittal into ERMS for traffic review must be completed as described below. This submittal must include the name and contact information of the Traffic Designer.

- For all interstate road projects, non-interstate road projects 1 mile or longer, interchanges and dense arterial road projects near a freeway connection, all traffic-plan sheets and supporting documents in accordance with sections 14-2.06, 14-2.07, and 14-2.08, should be submitted separately for Stages 1, 2, and 3. The Title sheet and Des Number may be the same as the road plans. Where a road project contains all or a combination of signal(s), signage, or lighting details, all traffic-plan detail sheets may be included in the same traffic review submittal plan set.
- For all non-interstate road projects less than 1 mile, all traffic-plan detail sheets in accordance with sections 14-2.06, 14-2.07, and 14-2.08, should be submitted separately for Stages 2 and

3. Title sheet and index and General Notes sheets are not required for these projects. Where a road project contains all or a combination of signal(s), signage, or lighting details, all traffic-plan detail sheets may be included in the same traffic review submittal plan set.

- For all bridge projects that include lighting and sign structures, all traffic-plan detail sheets in accordance with sections 14-2.06 and 14-2.08, should be submitted separately for Stages 2 and 3. Title sheet and index and General Notes sheets are not required for these projects. Where a bridge project contains lighting and sign structure, all traffic-plan detail sheets may be included in the same traffic review submittal plan set.

The file naming format for the submittal into ERMS is as follows: [Submittal] [Description] [Des No.] for Traffic Services STG1 or STG2 or STG3.

Example: TRAF Plans 0900010 for Traffic Services STG1

Questions should be directed to TrafficIDMInquiries@indot.IN.gov

14-2.0 PLAN SUBMITTALS [Rev. Oct. 2018]

The checklists included in the following sections are intended as a guide and are not all inclusive. Their purpose is to provide a minimum list of items that are to be independently reviewed prior to submittal. These lists are not a checklist of drafting and design items to be included on the plans. Items in the checklist are considered as part of the review evaluation process. Items that are not included in a given submittal should be identified in the transmittal letter with a brief explanation of the omission.

14-2.01 Road Plans, New Construction or Reconstruction Project

14-2.01(01) Grade Review Meeting [Rev. Mar. 2021]

A grade review meeting should be held with the project manager prior to the Stage 1 plan review submittal. The meeting is primarily for a Major project and is to be held at the discretion of the project manager. The following plans sheets, overall sheets, and documentation must be prepared for the grade review meeting.

1. Typical Cross Sections. These should include the following:
 - a. lane and shoulder widths;
 - b. profile grade;
 - c. cross slope;
 - d. curbs;
 - e. sidewalk locations and widths;
 - f. bicycle facilities;
 - g. side slopes;
 - h. shoulder corrugations, if warranted; and
 - i. ditches, in cut and fill sections.

2. Overall Plan View. A sheet showing the overall plan view of the existing topography and preliminary geometrics is required. The overall plan view should be to a scale which is legible for review and discussion at the meeting.

3. Overall Proposed Profile Sheet. A sheet showing the overall proposed profile with the existing ground is required. The overall proposed profile should be to a scale which is legible for review and discussion at the meeting. More than one sheet may be required.

4. Interchange Layout or Overall Layout Sheet. A sheet showing the overall plan view of the existing topography and preliminary geometrics for each interchange is required. The overall plan view should be to a scale which is legible for review and discussion at the meeting. More than one sheet may be required.

5. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report. Where a document is not required, reasoning should be noted.

- a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
- b. TMP meeting minutes or other correspondence.
- c. Determination of Significant Work Zone Impacts. Copy from scoping report, if not included in the scoping report, complete the determination of significant work impacts, see Section 503-2.02.

14-2.01(02) Interchange Geometrics Submission to FHWA

For a project which includes at least one interchange requiring Federal oversight, the proposed horizontal alignment for the interchange may be required prior to the Stage 1 review submission. The following must be considered for quality assurance.

1. Geometrics. The plans sheets for the interchange geometrics should be graphically completed including stationing, curve data, bearings, etc. The design speed for each ramp should be shown.
2. Ramp Grades. Investigate ramp grades in as much detail as required to determine their effect on the proposed horizontal alignment.
3. Traffic Elements. The traffic elements to be considered to determine their effect on the interchange alignment are as follows:
 - a. traffic counts and turning movements;
 - b. consideration of signing;
 - c. consideration of signals at ramp terminals; and
 - d. consideration of illumination (high mast or conventional).
4. Design Information. Include all applicable design information (e.g., economic analysis, drainage analysis).

14-2.01(03) Stage 1 Review Submission [Rev. Mar. 2021]

Plans should be approximately 25% complete at this stage.

Place the proposed design information in the computer-aided details file for this submittal. This information will be submitted in pdf format. However, the plans need not be in final form. The designer should place notes on the plans which explain situations or items which are not readily apparent, and which may influence the proposed design. The notes are to be removed in later submissions.

If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09).

The following sheets and information must be reviewed for quality assurance and should be included with the review submission:

1. Conformance. Review the plans for conformance with the Level One controlling design criteria listed in Section 40-8.02(01), and indicate apparent or possible design exceptions. Also, identify discrepancies from the Level Two design criteria listed in Section 40-8.02(02).

2. Abbreviated Engineer's Assessment. Provide a written scope of the project requirements. This will be a short description of the criteria proposed for use in the design of the project.
 - a. If an Abbreviated Engineer's Assessment has been prepared, a copy should be included with the submission.
 - b. If an Abbreviated Engineer's Assessment was not prepared, the designer should provide a brief written description of the project. The description will, at a minimum, include the information as follows:
 - (1) project location;
 - (2) project need and purpose;

- (3) existing facility;
- (4) traffic data;
- (5) identification of proposal;
- (6) cost estimate;
- (7) environmental issues;
- (8) right-of-way impact;
- (9) traffic maintenance during construction; and
- (10) concurrence. For an INDOT project, signed by the district production director or the district planning director. For an LPA project, signed by the Project Sponsor.

3. Level One Checklist and Design Computations. The designer should submit a Level One checklist, including computations for the mainline and each S-line. The designer should include computations for the required intersection sight distance at each public road, including each local-service road or frontage road within the project limits. The designer should also submit documentation of the intersection sight distance provided at each public road. Level One Criteria verification is not required for maintenance of traffic at this time.

It is not necessary to submit a Level One checklist for an S-line that does not exceed the work necessary to build the appropriate public-road approach, including the required taper distance to account for transitioning to the existing pavement width. This does not relieve the designer of making the project satisfy all Level One design elements for such an S-line, e.g., maximum grade, vertical stopping sight distance, and intersection sight distance.

The computations for the Level One items and intersection sight distance are to be initialed and dated by the designer and reviewer before submission. The items to be included are as follows:

- a. Level One checklist;
- b. project-length computations including guardrail lengths and other contributing factors; and
- c. design computations for determining geometrics.

4. Index and Title Sheet. At this project stage, information on the title sheet should include the following:

- a. project numbers;
- b. description (des) number;
- c. location map;
- d. project location map including north arrow and scale;
- e. description of the project work type and location;

** PRACTICE POINTER **

The location description should be simple and should follow the description on the schedule. For example, *Bridge replacement on State Road 67 over Fall Creek, located 8 miles southwest of the south junction with State Road 39, in Section 13, T-11-N, R-2-W, Ray Township, Morgan County, Indiana.* A legal description should not be used.

- f. design data including design speed, project design criteria, functional classification, terrain, traffic data, urban or rural area, and access control.
- g. applicable reference point (does not apply to local agency project);
- h. signature blocks, but not filled in at this stage;
- i. gross and net project lengths, not including incidental construction or lengths along S-lines;
- j. an index of plan sheets at this stage. Sheet numbers will change for future submittals;
- k. list of utility owners and addresses;
- l. bridge structure information;

- m. latitude and longitude; and
 - n. appropriate version of Standard Specifications.
5. Typical Cross Sections. Typical cross sections should show only the basic configuration and design features. These include the following:
- a. lane and shoulder widths;
 - b. profile grade, construction centerline, paper-relocation line, and survey-line locations;
 - c. basic design features including curbs, sidewalk locations and widths, pavement and shoulder cross slopes, side slopes, ditches, shoulder configurations (if warranted), bicycle facilities, etc.; and
 - d. clear-zone width for 4R project, or obstruction-free-zone width for 3R project.
6. Traffic-Maintenance Details. The conceptual traffic-maintenance strategy and phasing should be detailed.
7. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless it is not required. Where a document is not required, reasoning should be noted.
- a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence,
 - c. Determination of Significant Work Zone Impacts, see 503-2.02,
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Draft design exception request,

- i. List of preferred mitigation measures, see Section 503-4.0,
8. Plan and Profile Sheets. These sheets will include only the preliminary design information. The details that should be addressed include the following:
- a. existing topography;
 - b. beginning and end of project;
 - c. horizontal alignment (e.g., horizontal curve data, PC, PI, PT, bearings);
 - d. vertical alignment and its relationship to grade-controlling features;
 - e. preliminary drainage design;
 - (1) include mainline culverts;
 - (2) include ditch grades only if they must be known to establish the profile grade;
 - (3) need not show storm sewers;
 - f. preliminary public-road approach and drive locations;
 - g. alignment-controlling features (e.g., high-water levels, existing crossroads and bridges, regulated drains, drainage structures, railroads, underdrain criteria, traffic-maintenance considerations, cemeteries, historical buildings, parks, ADA requirements, etc.);
 - h. proposed guardrail limits, only if they affect the project limits; and
 - i. survey reference ties and benchmark data.
9. Details. These should include only the superelevation-transition diagrams.

Interchange. If the project includes at least one interchange, the general layout of the interchange should be shown, including the following:

- a. geometrics;
- b. preliminary ramp grades;

- c. horizontal and vertical alignments;
 - d. traffic elements; and
 - e. design information.
10. Cross Sections. The preliminary cross sections should include the following:
 - a. templates of the typical sections placed on the existing cross sections;
 - b. profile-grade elevations; and
 - c. mainline drainage structures.
11. Design Information. In addition to the plans, the designer should include copies of the preliminary hydraulic analysis for each mainline culvert, if applicable, and results of economic analyses that may have been completed for alternative grade lines. The preliminary cost estimate should be developed for the major pay items with percentages for the minor pay items. The hydraulic analysis should be signed and sealed by a professional engineer licensed in Indiana.
12. INDOT All Project Commitments Report. This should include all known resolutions.

14-2.01(04) Geotechnical Investigation Request and MSE Wall Initial Feasibility Review Submittal [Rev. Feb. 2021]

Upon approval of the Stage 1 review submission, the Geotechnical Investigation will be requested. Anticipated pavement sections and intended treatment should be provided. If the project includes MSE walls, the Stage 1 plans are required to be submitted to the Geotechnical Services Division for the initial feasibility review of MSE walls at MSEWallShopDrawings@indot.IN.gov. The sheets to be included with this request are as follows:

1. Title sheet;
2. Typical cross sections;
3. Roadway plan and profile;
4. Bridge General Plan;
5. Layout;

6. Details. This should show approximate location of a noise wall, retaining wall, or high-mast lighting tower; and
7. Cross sections.

14-2.01(05) Preliminary Field Check Meeting [Rev. Oct. 2018, Mar. 2021]

A preliminary field check meeting should be held after the Stage One review submission and prior to the Stage Two review submission. The preliminary field check meeting is not part of a review submittal. Plan sets should be distributed a minimum of two weeks prior to the meeting. The Traffic Control Plan Checklist should be coordinated with the appropriate district Traffic Engineer. See [Section 14-1.02\(03\)](#) for Field Check Report and Traffic Control Plan Checklist information.

To hold the Preliminary Field Check meeting, plans should be approximately 40% complete. The following plans sheets and information must be included for quality assurance.

1. Previous Reviews. Incorporate comments from the previous reviews.
2. Conformance. The designer should check the plans for conformance with the Level One controlling design criteria listed in Section 40-8.02(01). Apparent or possible design exceptions should be identified. Discrepancies from the Level Two design criteria listed in Section 40-8.02(02) should also be identified. The required documentation for all Level One and Level Two design exceptions should be prepared.
3. Title and Index Sheet.
4. Plat Sheet. A preliminary Plat No. 1 should be included for a project on a Department-maintained route requiring right of way. See Section 85-2.0.
5. Plan and Profile Sheets. In addition to the information described in Section 14-2.03(02), show the following:
 - a. project limits;
 - b. elevations and grades of ditches so that accurate right-of-way requirements can be determined;
 - c. construction limits;
 - d. proposed right of way, including temporary right of way;
 - e. public-road approach and drive locations;

- f. approximate roadside barrier or guardrail locations;
 - g. preliminary curb ramps, sidewalks, bicycle lanes, etc., if not shown on the Details sheets; and
 - h. conceptual storm-sewer layout which includes the trunk line and outlet locations.
6. Details Sheets. Include preliminary layouts for the details as follows:
- a. roadway and shoulder layout for guardrail;
 - b. modified approaches, signs, sign structures, lighting, signals, where applicable. Traffic items should be submitted in a separate set of plans;
 - c. intersection layout details including right- and left-turn lanes with the turning movements indicated;
 - d. retaining walls;
 - e. special drainage structures;
 - f. superelevation-transition diagrams;
 - g. weigh station and associated facilities;
 - h. rest area and associated facilities; and
 - i. if shoulder corrugations are warranted, and the plans include details for non-standard public-road approaches, drives, etc., each detail should show the extent of corrugations installation required in conjunction with the construction illustrated by the detail. If applicable, the *Standard Drawings* should be used as a guide in determining the limits of corrugations installation relative to the feature shown in the detail.
7. Traffic-Maintenance Details. The conceptual traffic-maintenance strategy and phasing should be outlined. Traffic maintenance should be reviewed in the context of other projects and detour conditions, see Section 503-3.01(03) for more details. Plans should be developed to satisfy the project development process (PDP) Manual's Project Constructability Review 1 and Section 503-3.0
8. Cross Sections. The preliminary draft should include the following:
- a. profile-grade elevations;

- b. templates of the typical sections placed on the existing cross sections;
 - c. drainage structures;
 - d. approaches and drives; and
 - e. buildings.
9. Design Information. The activities which should occur include the following:
- a. Geotechnical coordination;
 - b. unique special provisions initiation;
 - c. preliminary pavement design request submittal.

14-2.01(06) Preliminary Right-of-Way Plans Preparation

See Chapter 85 for criteria and information that should be included with the Right-of-Way Plans. The designer should review the instructions for quality assurance.

14-2.01(07) Stage 2 Review Submission [Rev. Apr. 2020, Mar. 2021, Dec. 2021, Jan. 2022]

Plans should be approximately 55% complete at this stage.

Plans for this submittal should be close to their final form and should be legible and consistent with the quality desired for public viewing at a public-information meeting, if required. The designer should review the *INDOT Typical Plan Sheets* document to determine what information should be included on each sheet. If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09).

A separate set of Stage 2 plans should be uploaded to ERMS for publication. The document title should use the *PlansPub* or *PlansXsectPub* description abbreviation.

Review the following sheets and information for quality assurance and include them with this submission.

1. Previous Reviews. Include the marked-up plans from the Stage One submittal, changes made from the Preliminary Field Check meeting, and comments from the construction review with this submission. Include revisions to the plans due to Geotechnical Report recommendations, if completed. Include responses to preliminary field check questions.
2. Conformance. The designer should check the plans for conformance with the Level One controlling design criteria listed in Section 40-8.02(01). Apparent or possible design exceptions should be identified. Discrepancies from the Level Two design criteria listed in Section 40-8.02(02) should also be identified. The required documentation for all Level One and Level Two design exceptions should be prepared.
3. Index and Title Sheet. Finalize the title sheet and index sheet for the roadway plans.
4. Plat Sheets. Plat sheets, if required, should be consistent with the plans and finalized.
5. Traffic Maintenance Details. Finalize all maintenance of traffic details including pedestrian and bicycle maintenance of traffic where required in accordance with Section 503-3.0.
6. Plan and Profile Sheets. Right of way should be finalized and consistent with the detail sheets. Additional information to be shown is as follows:
 - a. drainage features (e.g., storm sewers, pipe structures, ditch grades, preliminary inlet spacing for storm-sewer trunk line design, etc.) and proposed drainage notes; and
 - b. permanent erosion protection, including paved side ditches, riprap, and sodding limits.
 - c. Finalize curb ramps, sidewalks, bicycle lanes, etc., if not shown on the Details sheets.
7. Structure Data Table. The table should be in a preliminary form and should include structure numbers and locations.
8. Approach Table. The table should be in a preliminary form and should include approach geometrics.
9. Cross Sections.
10. Design Information. Information to be included is as follows:

- a. hydraulics and storm-sewer calculations, signed and sealed by a professional engineer licensed in Indiana; and
 - b. cost estimate. The preliminary cost estimate should be refined for the major pay items with percentages shown for the minor pay items.
11. Level One Checklists and Design Computations. If there are no changes to the plans which affect Level One criteria since the prior submission, it is acceptable to copy the previous Level One Checklist and add a statement that no changes have been made to the plans that affect Level One criteria. The statement should be initialed and dated for the current submission. The plans must be developed to satisfy the PDP Manual's Project Constructability Review 2.

The designer should submit a Level One checklist, including computations for the mainline, each S-line, and each traffic-maintenance phase. The designer should include computations for the required intersection sight distance at each public road, including each local-service road or frontage road within the project limits. The designer should also submit documentation of the intersection sight distance provided at each public road. This requirement also applies to the traffic-maintenance phases.
12. INDOT All Project Commitments Report. This should include all known resolutions.
13. Initiate Stormwater Quality Manager Determination. The designer should Provide initial Stormwater Quality Manager level recommendation on Transmittal Letter with brief explanation. The SWQM level starts at Level 1 and will be elevated to Level 2 based on meeting either the primary or secondary categories. SWQM Level determination guidance is available from the Department's [Editable Documents webpage](#), under Environmental.
14. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless it is not required. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts, see Section 503-2.02.

- d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Contract Provision Strategies, see Section 503-2.06,
 - i. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - j. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT)
 - k. Final design exception approvals,
 - l. Final mitigation measures, see Section 503-4.0.
15. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.
16. MSE Wall Design Review Checklist. If the project includes MSE walls, and the geotechnical soils investigations and the retaining wall plan sheets have been finalized, the relevant plan sheets and the completed MSE Wall Design Review checklist may be submitted to the Geotechnical Engineering Division for review at MSEWallShopDrawings@indot.IN.gov at this stage. The checklist is available for download from the Department's [Design Manual Editable Documents](#), under Geotechnical.

14-2.01(08) Right-of-Way Plans Preparation, if done by others [Rev. Mar. 2021]

Chapter 85 provides the criteria and information that should be included with a set of right-of-way plans. The designer should review the instructions for quality assurance as follows.

- 1. Previous Reviews. Incorporate all revisions made during the previous plan submissions.
- 2. Checklist for Right-of-Way Plans. Complete the checklist shown in Figure 85-2F.

3. Plan Sheets. The required sheets and information are as follows:
 - a. title sheet;
 - b. Index and General Notes sheet;
 - c. plat sheet;
 - d. Location Control Route Survey Plat;
 - e. plan and profile sheets;
 - f. Details sheets, including temporary traffic control details;
 - g. Approach Table;
 - h. all sheet cross references; and
 - i. all project-information boxes, including right-of-way project number and sheet numbers.

4. Initiate right-of-way engineering.

14-2.01(09) Public Hearing Plans Preparation, if required [Rev. Mar. 2018, Mar. 2021, Sep. 2021]

See [Chapter 8, Public Involvement Procedures](#), for the minimum thresholds that trigger public involvement for a project. If a public information meeting or hearing is required, coordinate with the INDOT project manager regarding the public information process. Public involvement activities are contained in the INDOT *Project Development Public Involvement Procedures Manual*. The manual and additional public involvement information is available from the [INDOT Public Involvement website](#).

A public hearing is required for all historic bridge projects processed through the *Programmatic Agreement Among the Federal Highway Administration, the Indiana Department of Transportation, the Indiana State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Management and Preservation of Indiana's Historic Bridges (Historic Bridges PA)*. Procedures for public hearings under the *Historic Bridges PA* can be found in the [INDOT Cultural Resources Manual](#), Part IV, Chapter 3.

It should be noted that some historic bridge projects may be processed under the *Programmatic Agreement Among the Federal Highway Administration, the Indiana Department of Transportation, the Advisory Council on Historic Preservation, and the Indiana State Historic Preservation Officer Regarding the Implementation of the Federal Aid Highway Program in the State of Indiana (Minor Projects PA)*. Projects processed under the *Minor Projects PA* typically do not require public involvement. INDOT's Historic Bridge Specialist should be contacted with any questions about which *PA* is applicable for a project. The current Historic Bridge Specialist can be found within the organizational chart of the Environmental Division and related inquiries can be sent to INDOTHistoricBridges@indot.IN.gov.

Where public involvement is required, and the environmental document has been released for public involvement, the designer should submit the following to the INDOT District Capital Program Management staff. Coordinate with the INDOT Project manager regarding the public information process.

1. Stage 2 Plans. Plans must be suitable for public viewing, i.e. no markups or comments. Upload plans to ERMS with the "PHRG" Submittal prefix.
2. Public Involvement Summary. Templates for the public information summary and notification cover letter as well as an example are available from the [Department's Editable Documents webpage](#), under Public Involvement. Attach the summary and cover letter to the ERMS upload notification email.
3. Traffic-Maintenance Plan (as required). In preparation for a public information meeting, the designer may be asked to perform the activities as follows.
 - a. Displays. Prepare displays that can be used in a coordination meeting or a public information meeting. These include, but are not necessarily be limited to, sketches of the typical cross section for each phase of the construction, and composite drawings showing all ramp closures with traffic-flow arrows indicating the number of lanes to be open during each construction phase.
 - b. Transportation Management Plan (TMP). Address the requirements of a TMP that has been developed for the project and items listed in Section 503-3.01(03).

- c. Traffic Impacts/Queue Analysis. Address constraints due to lane closures, including anticipated traffic impacts/queues, see Section 503-2.07.

14-2.01(10) Final Plans Right-of-Way Plans Preparation

Chapter 85 provides the criteria and information that should be included with a set of right-of-way plans. This submission is not required for a local public agency project. The designer should review the instructions for quality assurance, and perform the following:

1. include the marked-up Preliminary Right-of-Way Plans with this submission, if required;
2. incorporate all revisions made during the Preliminary Right-of-Way Plans submission review;
3. complete all project-information boxes, including right-of-way project number and sheet numbers;
4. complete all sheet-numbers cross references; and
5. review the plans against the checklist shown as Figure 85-2F.

14-2.01(11) Final Field Check Meeting [Rev. Mar. 2021]

A Final Field Check meeting should be held after the Stage Two review submission and prior to the Stage Three review submission. The Final Field Check meeting is not part of a review submittal. The meeting is to be held at the discretion of the project manager for each major project. The meeting should not be required for a minor project. Plans sets should be distributed a minimum of two weeks prior to the meeting. See [Section 14-1.02\(03\)](#) for Field Check information.

To hold the Final Field Check meeting, plans should be approximately 80% complete. The following sheets and information must be included for quality assurance.

1. Previous Reviews. Incorporate comments from the previous reviews.

2. Plans Sheets. The plans should be nearly complete. Changes resulting from the public information meeting, geotechnical recommendations, and pavement-design recommendations should be incorporated onto the plans. Legends on sheets should be completed and checked for accuracy and consistency with Section 14-3.04. The designer should include the information on the sheets as follows.
 - a. Title Sheet. Complete the Design Data block.

 - b. Index and General Notes Sheet. Check the general notes to ensure that they are current and accurate. Revise the index as necessary.

 - c. Plan and Profile Sheets.
 - (1) Ensure that structure notations are completed; sodding, riprap, and paved sodded ditch locations are indicated; earthwork balances are shown; and removal items identified.

 - (2) Update all property lines based on right-of-way engineering. Add the station-and-offset callout for each right-of-way or property-line break point.

 - d. Details Sheets. Ensure that all details are completed and included. This includes final details for traffic maintenance and traffic-design elements (e.g., intersections, signals, signing, and lighting). This also includes details and notes for temporary erosion and sediment control. The plans must be developed to satisfy the PDP Manual's Project Constructability Review 3.

 - e. Tables. Complete all data tables including the following:
 - (1) Structure Data Table;

- (2) Approach Table;
 - (3) Underdrain Table;
 - (4) Other miscellaneous tables such as guardrail, paved side ditches, sodding, right-of-way markers, monuments, mailboxes, curb ramps, sidewalks, etc.; and
 - (5) Earthwork Summary table.
- f. Cross Sections. Design information should be essentially complete. This includes final structure indications, earthwork areas and volumes, and benching areas and volumes.
3. Computations. Include computations for erosion- and sediment-control features design.
4. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.
- a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04,
 - b. TMP meeting minutes or other correspondence,
 - c. Determination of Significant Work Zone Impacts, see Section 503-2.02,
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Contract Provision Strategies, see Section 503-2.06

- i. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - j. Final design exception request,
 - k. Final mitigation measures, see Section 503-4.0.
5. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.

14-2.01(12) Stage 3 Review Submission [Rev. Feb. 2012, Feb. 2021, Mar. 2021, Jun. 2021, Dec. 2021]

Plans should be approximately 95% complete at this stage.

The purpose of this submittal is to ensure that the plans are complete and satisfy the criteria provided in the Engineering Assessment studies. The following should be completed and reviewed for quality assurance. Include responses to Final Field Check questions.

If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09).

For a project that requires only a Stage 3 Submission, all documentation required for Stages 1 through the Final Field Check Meeting, if not previously submitted, must be included in the Stage 3 submittal. Documentation will include the abbreviated Engineer's Assessment, geotechnical report, and pavement-design approval.

1. Previous Reviews. Include the marked-up plans from the Stage 2 submittal and changes made from the Final Field Check meeting with this submission. Right-of-way changes made after Final Right-of-Way Plans are submitted should be processed in accordance with Section 85-3.03.
2. Conformance. Review the plans for conformance with the Level One controlling design criteria listed in Section 40-8.02(01) and indicate approved dates for design exceptions.

3. Plans Set. If a Final Field Check meeting is not held at the discretion of the project manager, all of the milestone requirements should still be review and incorporated.
 - a. Erosion Control Plan. Include the completed set.
 - b. Road Summary Sheets. The content and requirements are described below. For a large project for which the standard-sized Summary tables cannot accommodate all of the items, multiple custom Summary sheets should be used to accommodate all the necessary information. The Summary sheet frames, in DGN and XLS format, can be downloaded from http://www.in.gov/indot/div/cad/v8i_downloads.htm. The Pavement Quantities and Approach Table, Structure Data, Paved Side Ditch Summary, Riprap Ditch and Sodding Table, Underdrain Table, Guardrail Summary Table with guardrail-related pay items, Sign Summary Table, Pipe Material Selection, and mailbox approaches information including required HMA quantities should be completed.
 - c. Cross Sections. The project engineer or supervisor will require the elevations for existing cross sections in order to calculate the final earthwork quantities.

If the project was designed from an electronic survey, the design calculations should include a data table created from the electronic cross-sections which indicates all existing cross-section elevations.

An example data table is shown as Figure [14-2A](#).

4. Quantities. Finalize all quantities.
5. Reports. Ensure that the recommendations from the Geotechnical Report and other reports regarding peat, hazardous waste, special waste, etc. have been incorporated into the plans, specifications, and cost estimate.
6. Cost Estimate. Conduct a detailed review to ensure that all necessary pay items have been included. Finalize the construction cost estimate using Estimator.

7. Level One Checklists and Design Computations. If there are no changes to the plans which affect Level One criteria since the prior submission, it is acceptable to copy the previous Level One Checklist and add a statement that no changes have been made to the plans that affect Level One criteria. The statement should be initialed and dated for the current submission.

8. Special Provisions and Special Provision Menus. Compile all USPs submitted via SharePoint into a single Word document and submit via ERMS. This is to aid the Design Reviewer in viewing a comprehensive Stage 3 submission and does not replace the SharePoint process. See Chapter 19 for additional information on the USP submittal and review process.

Compile all completed contract-specific recurring special provisions into a single Word document.

Complete the unique and recurring special provisions menus.

9. Rule 5. If required, and not previously submitted in accordance with Section 9-1.02, complete the Rule 5 Submission as described in Chapter 205.

10. Underground Storage Tanks Removal. If this work is required, the designer should coordinate such activity with the Office of Environmental Services manager. The designer should complete Figure [14-2B](#), Underground Storage Tanks Removal information request. If a final field check is not required, the coordination should take place six months prior to the Ready for Contracts date.

This coordination is to ensure that required pay items such as excavation and handling of contaminated soil are included in the contract.

11. INDOT All Project Commitments Report. This should include all known resolutions.

12. Proprietary Material. If a proprietary material is specified that is either not listed the Department's [Approved Materials List](#) or is on Department's list of [Approved Programmatic Proprietary Material](#), the designer must submit for approval a certification

or a public-interest finding request. Editable versions of these documents appear on the Department's website, at <http://www.in.gov/dot/div/contracts/design/dmforms/>, under Proprietary Material.

13. Environmental Consultation Form. Summarization 7-3C should be completed at this submission. An editable version of this document appears on the Department's website, at www.in.gov/dot/div/contracts/design/dmforms/, under Environmental.
14. MSE Wall Design Review Checklist. If the project includes MSE walls and the retaining wall plans were not finalized and submitted at Stage 2 along with the completed MSE Wall Design Review checklist (or the Stage 2 review comments have not been addressed to the satisfaction of Geotechnical Engineering Division), the relevant plan sheets and the completed MSE Wall Design Review checklist are required to be submitted to the Geotechnical Engineering Division for review at MSEWallShopDrawings@indot.IN.gov. The checklist is available for download from the Department's [Design Manual Editable Documents](#), under Geotechnical.
15. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.
16. Final Approved IHCP Request, if required. See Section 503-3.02.
17. Final TMP Report for Significant Projects. See Section 503-2.0

14-2.01(13) Final Tracings Submission

Plan should be 100% complete at this stage. The construction project number should be shown in the box in the upper left-hand corner of the title sheet and the lower right-hand corner of all other sheets.

The project manager will submit the Final Tracings package to Contracts Administration. The submittal should include the items listed in [Section 14-1.02\(04\)](#).

14-2.02 Road Plans, Rehabilitation Project with No Additional Right of Way Required

14-2.02(01) Grade Review Meeting [Rev. Mar. 2021]

A grade review meeting should be held with the project manager prior to the Stage 1 plan review submittal. The meeting is for a major project and is at the discretion of the project manager. -The following plan sheets, overall sheets, and documentation must be prepared for the grade review meeting;

1. Typical Cross Sections. This should include the following:
 - a. lane and shoulder widths;
 - b. profile grade;
 - c. cross slopes;
 - d. curbs;
 - e. sidewalk locations and widths;
 - f. bicycle facilities;
 - g. side slopes;
 - h. shoulder corrugations, if warranted;
 - i. ditches;
 - j. detailed pavement design showing intended pavement treatment, such as resurfacing, crack and seating, rubblizing, replacement, etc.;
 - k. underdrains, with locations shown relative to pavement; and
 - l. clear-zone width, if 4R project.

2. Overall Plan View. A sheet showing the overall plan view of the existing topography and preliminary geometrics is required. The overall plan view should be to a scale which is legible for review and discussion at the meeting.

3. Overall Proposed Profile Sheet. A sheet showing the overall proposed profile with the existing ground is required. The overall proposed profile should be to a scale which is legible for review and discussion at the meeting. More than one sheet may be required.
4. Interchange Layout or Overall Layout Sheet. A sheet showing the plan view of the existing topography and preliminary geometrics of each interchange is required. The overall plan view should be to a scale which is legible for review and discussion at the meeting. More than one sheet may be required.
5. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts. Copy from scoping report, if not included in the scoping report, complete the determination of significant work impacts, see Section 503-2.02.

14-2.02(02) Stage 1 Review Submission

See [Section 14-2.01\(03\)](#).

14-2.02(03) Geotechnical Investigation Request and MSE Wall Initial Feasibility Review Submittal [Rev. Feb. 2021]

See [Section 14-2.01\(04\)](#).

14-2.02(04) Preliminary Field Check Meeting

See [Section 14-2.01\(05\)](#).

14-2.02(05) Stage 2 Review Submission

See [Section 14-2.01\(07\)](#).

14-2.02(06) Public Information Meeting

See [Section 14-2.01\(09\)](#).

14-2.02(07) Final Field Check Plans Submission Meeting

If a final field check is required, see [Section 14-2.01\(11\)](#).

14-2.02(08) Stage 3 Review Submission

See [Section 14-2.01\(12\)](#).

14-2.02(09) Final Tracings Submission

See [Section 14-2.01\(13\)](#).

14-2.03 Road Plans, Partial 3R Project

14-2.03(01) Preliminary Plans [Rev. Mar. 2021, Jun. 2021]

If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09). Preliminary Plans correspond to Stage 1 for traffic plans.

1. Title Sheet. This is the first page and should include the information as follows:
 - a. contract and Des numbers;
 - b. traffic data;

- c. design data as follows:
 - (1) design speed;
 - (2) project design criteria: Partial 3R (non-freeway);
 - (3) functional classification;
 - (4) rural or urban setting;
 - (5) terrain; and
 - (6) access control;

- d. project description information as follows:
 - (1) route number;
 - (2) county name and congressional township, range, and section;
 - (3) limits described from Department-maintained route intersections and by Reference Post system; and
 - (4) length (gross and net);

- e. location map, including information as follows:
 - (1) civil boundaries;
 - (2) county, township lines, corporate limits;
 - (3) nearby Department-maintained routes and major local roads;
 - (4) north arrow; and
 - (5) project limits, with stations and highlighted graphics;

- f. paving exceptions, with stations;
- g. station equations;
- h. current INDOT *Standard Specifications* effective year;
- i. certification block; and

- j. state location map.
2. Construction Plans Index. The Construction Plans Index is a tabulation and description of the numbered design drawings to be included in the plans document.
3. Strip Map. This is a line drawing which shows the following:
- a. route number;
 - b. beginning and ending stations and reference posts and station equations.
Consistent units should be used throughout the plans;
 - c. stations and reference posts for intersecting streets, county roads, city or town limits, and intersecting county lines and railroad crossings, bridges, and paving exceptions;
 - d. north arrow;
 - e. location of all recommended construction signs;
 - f. existing utility lines within construction limits; and
 - g. civil townships.
4. Typical Cross Sections. These are composed of the basic parts as follows.
- a. Illustration.
 - (1) Existing conditions and dimensions (i.e., pavement width, material type, thickness cross-slope, curb, shoulder, ditches, etc.).
 - (2) Proposed construction and dimensions (i.e., HMA courses with binder grading, overlay cross-slope, widening, curb shoulders, ditches, shoulder corrugations if warranted, etc.).
 - b. Legend showing labels and corresponding items. The descriptions shown in the pay item names should be used where applicable.

- c. Title block.
 - (1) Route number.
 - (2) limits of section and exceptions.

- d. Supplemental information block (i.e., curve data for superelevation).

- 5. Typical Approach Details. The INDOT *Standard Drawings* should be used. Existing field conditions not in accordance with the details shown on the *Standard Drawings* will require details to be shown on the plans.

- 6. Traffic-Maintenance Details. The conceptual traffic-maintenance strategy and phasing should be detailed.

- 7. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless it is not required. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04,
 - b. TMP meeting minutes or other correspondence,
 - c. Determination of Significant Work Zone Impacts. Copy from scoping report, if not included in the scoping report, complete the determination of significant work impacts, see Section 503-2.02.
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Contract Provision Strategies, see Section 503-2.06
 - i. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),

- j. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT)
 - k. Draft design exception request,
 - l. List of preferred mitigation measures, see Section 503-4.0.
8. Miscellaneous Details. These include all other details not covered by the strip map, typical section, or INDOT *Standard Drawings* (e.g., curb ramp or sidewalk locations and details.)
9. Special Provisions. The designer should follow the guidelines for preparing special provisions described in Section 19-2.0. The designer should not specify the use of proprietary or experimental products or construction methods.
10. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.

14-2.03(02) Assessing Preliminary Pavement Design

Once the project has been assessed to be a partial 3R project, the designer should determine an approximate pavement thickness for developing preliminary typical cross sections.

14-2.03(03) Preliminary Field Check [Rev. Apr. 2020, Mar. 2021]

The preliminary field check should occur at a point before development of preliminary plans. The preliminary field check should be scheduled with the district-office entities involved with plan development. The arrangements for scheduling the preliminary field check should be made while plan development is still proceeding, if possible. Copies of preliminary plan documentation should be made available for review prior to the preliminary field check.

The persons who should attend the preliminary field check are as follows:

1. District Personnel.
 - a. Design Team leader.

- b. Office of Construction area engineer.
 - c. Office of Construction field engineer.
 - d. Subdistrict manager or unit foreman.
 - e. Designer.
 - f. Traffic engineer.
 - g. Utilities/railroads engineer.
 - h. District Asset Engineer, e.g. Bridge, Pavement, Culvert, as appropriate.
2. Other Personnel.
- a. Local government agency if applicable.
 - b. Local utilities if applicable.
 - c. Planning Division's Office of Pavement Engineering manager, if AADT \geq 5000 or trucks percentage \geq 10%.
3. INDOT All Project Commitments Report. This should include all known resolutions.
4. Initiate Stormwater Quality Manager Determination. If possible, the designer should provide initial Stormwater Quality Manager level recommendation. Otherwise submit with Final Plans. See [Section 14-2.01\(07\)](#).

14-2.03(04) Right of Way

Right-of-way acquisition should not be required. If it is required, the designer should return to the Engineering Assessment phase to consider the project as full 3R, 4R, or possibly new construction.

14-2.03(05) Public Hearing

Public involvement should not be required. If it is, the designer should see 14-2.01(09).

14-2.03(06) Utilities and Railroads

The portions of the project limits which may affect existing utilities should also be addressed early in the PPD phase. The designer should stay in contact with the district Utilities/Railroads Team leader to ensure that existing utilities are relocated to avoid delays in the project development. To accomplish this, the district Utilities/Railroads Team leader should have final check prints as early as possible.

If one or more railroad crossings are within the project limits, the district Utilities/Railroads Team leader should be advised. See Chapter 105, Railroad Coordination and Chapter 47, Railroad-Highway Grade Crossings.

14-2.03(07) Calculations

The calculations must follow a systematic and logical methodology. All calculations should be reviewed for accuracy. Systematic calculations make review and verifying quantities considerably more efficient. All calculations should be submitted with the final documents and should remain the property of the Department.

14-2.03(08) Returned Correspondence

Once input from the district offices of Highway Management, Highway Design and Technical Support, Construction, and Traffic has been received with suggested changes following the preliminary field check, it may be necessary to arrange and conduct a final field check. See Section 14-2.02(07) for the personnel list who should attend this field check.

14-2.03(09) Final Pavement Design

If the current AADT $\geq 5,000$ or the trucks percentage $\geq 10\%$, a request for a final pavement design should be submitted to the Planning Division's Office of Pavement Engineering. If the AADT $< 5,000$ or the trucks percentage $< 10\%$, the designer performs the final pavement design.

14-2.03(10) Final Check Prints [Rev. Mar. 2021]

If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09). Final Check Prints correspond to Stages 2 and 3 for traffic plans.

The final check prints should now be completed. These documents are outlined below.

1. Transmittal Letter. This document should include the following:
 - a. date;
 - b. To, Thru, From personnel;
 - c. contract number;
 - d. route number;
 - e. county;
 - f. Des number;
 - g. project description and location;
 - h. estimated contract completion date or number of work days;
 - i. estimated costs; and
 - j. letting date.

2. Proposal Book Cover Sheet. This sheet should include the contract number and letting date.

3. Contract Information Book Cover Sheet. This sheet should include the following:
 - a. contract number;
 - b. letting date; and

- c. certifications (approval signatures and seals).
4. Contract Requirements Worksheet. The designer should place project identification information on this sheet. The designer should coordinate with the district construction engineer to acquire appropriate necessary information. The designer will then transmit it Contract Administration. The identification information should include the following:
- a. contract number;
 - b. letting date;
 - c. district;
 - d. project number;
 - e. route number;
 - f. description, including work type;
 - g. location;
 - h. county; and
 - i. effective dates of Standard Specifications and List of Approved Materials.
5. Table of Contents. This should indicate the documents to be identified as follows:
- a. contract number;
 - b. map of official detour;
 - c. Proposal;
 - d. Schedule of Pay Items;
 - e. construction plans and number of pages; and
 - f. special provisions.
6. Estimate of Quantities and Cost Estimate. All pay items, including undistributed items, should be referenced in the plans. All pay items are to be worded using the nomenclature shown in the INDOT *Standard Specifications* and authorized-estimating-software listing. The sequence, or order of the pay items, should be numerical by INDOT *Standard Specifications* reference number.

7. INDOT All Project Commitments Report. This should include all known resolutions.
8. Initiate Stormwater Quality Manager Determination. The designer should provide initial Stormwater Quality Manager level recommendation on Transmittal Letter. See [Section 14-2.01\(07\)](#).
9. Traffic Maintenance Details. Finalize all maintenance of traffic details including pedestrian and bicycle maintenance of traffic where required in accordance with Section 503-3.01.
10. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.
11. Final Approved IHCP Request, if required. See Section 503-3.02.
12. Final TMP Report for Significant Projects. See Section 503-2.0

14-2.03(11) Review of Final Check Prints

After the designer has assembled the final check prints, a copy may be circulated among other designers for review and comment. The final check prints are then forwarded to the district Design Office manager for additional review and comments. Upon completion, the designer will make the appropriate revisions.

A set of the final check prints is to be sent to the appropriate district offices of Program Management, Construction, Highway Design and Technical Support, or Traffic, as required. They are expected to review and return the set to the district Office of Design within one to two weeks. A cover letter should be sent with the set indicating what is expected and when it should be returned.

1. Office of Program Management Preliminary Review. A copy of the contract documents is supplied for its use in coordinating local-agency agreements and detours, and updating the production schedule.
2. Construction Review. The area engineer should review the contract documents and indicate errors, inconsistencies, and constructability. The area engineer completes the remaining information required on the Contract Requirements Worksheet such as the field-office requirements or the need for a profilograph, and also establishes the earliest date to begin work and the contract completion time.
3. Roadway Review. The Office of Highway Design and Technical Support reviews the contract documents and suggests additional changes or corrections. The review pertains to small drainage structures or pipes, wedge and level, patching, guardrail, and ditch work.
4. Traffic Review. The Office of Traffic Design reviews the contract documents and suggests additional changes or corrections pertaining to traffic maintenance or traffic safety. It also verifies and coordinates the locations and impacts to signal loops, detector housings, no-passing zones, pavement markings, etc.
5. Discussion with Design Office manager. After the other Offices have reviewed the contract documents and have offered suggested changes, the designer is to meet with the Design Office manager to discuss the changes and suggestions. The Design Office manager will then decide which corrections are to be made. The designer will then make the appropriate changes.
6. Office of Program Management Final Review. After all changes are made, a copy of the contract documents is sent to the Office of Program Management for final review. The manager may suggest more changes.
7. Office of Testing Review. The materials engineer may suggest changes to the Plant Laboratory recurring special provision.

14-2.03(12) Shelf-Ready Project

The final check prints are considered shelf-ready after they have been reviewed by the Design Office manager. The documents, now final plans, are to be kept on file until funds are appropriated and a letting date has been established.

14-2.03(13) Signatures and Seals

Once funds are appropriated and a letting date has been established, the final plans should be reviewed and updated. The final plans should then be signed, sealed, and dated by the appropriate individuals.

14-2.03(14) Contract Documents Package [Rev. Jan. 2013, Jun. 2021]

Upon receipt of the approved final plans by the Office of Program Management, they are ready to be transmitted as contract documents to Contract Administration for processing. The package should consist of the following.

1. Plans.
 - a. 11 in. x 8½ in. Plans-Sheets Format. The original construction plans and cross sections should be transmitted. If the cross sections are in the 36 in. x 24 in. format, only the originals of the cross sections should be sent.
 - b. 36 in. x 24 in. or 22 in. by 34 in. Plan-Sheets Format. The original construction plans and cross-sections and two sets of prints of the construction plans without cross-sections prints should be transmitted.

2. Estimate of Quantities and Cost Estimate. The estimate of quantities and cost estimate should be generated using the authorized estimating software (CES). A copy of the estimate in PDF format should be uploaded in ERMS. The control group number should be changed to 12 and the Contract Administration Planner should be notified via email.
3. Special Provisions. The completed unique and recurring special provision menus should be in excel format. The completed contract-specific recurring special provisions should be combined into a single Word document.

Do not submit unique special provisions via ERMS with the Final Tracings package. All approved USPs as listed on the USP menu will be incorporated into the Contract Information Book (CIB) by Contract Administration staff prior to advertisement. No additional action is required by the designer. See Chapter 19 for information on the unique special provision submittal and review process.

4. Detour Map. A map of the official detour and a map of an unofficial local detour, if required, with the approved unofficial-local-detour documents should be transmitted.

The approved package should be sent to Contract Administration, where the documents will be processed and prepared for letting. This step should be completed at least 14 weeks prior to the contract letting date.

14-2.03(15) Review Process [Rev. Jun. 2021]

1. Pre-Letting. Contract Administration may require additional information or further corrections to be made in order for the contract documents to be properly processed prior to advertisement. The designer should promptly address these concerns. All responses from the designer for questions posed during the advertisement period should be directed to the district construction engineer.
2. Post-Letting. Following the contract award, a preconstruction conference will be held. The designer should be available upon request to answer questions.

14-2.04 Bridge Plans, New Construction or Replacement Project [Rev. Feb. 2018, Mar. 2021]

A bridge determined to be historic, whether select or non-select, requires the completion of a Historic Bridge Alternatives Analysis (HBAA). The designer may not commence with the subsequent milestone submittals in this section until the HBAA has been reviewed by Cultural Resources Office and the Bridge Engineering Office, and each office has provided concurrence. See Chapter 412 for the Historic Bridge Project Development Process and additional information on historic bridges.

14-2.04(01) Hydraulics Submittal [Rev. May 2013, Mar. 2021]

Submittal of hydraulics information will be required a minimum of 60 days prior to the Stage 1 Review submittal. In preparing this submittal, consider the following.

1. All preliminary plotting should be completed and checked.
2. For a new bridge over a waterway, a structure replacement, or a bridge on a new alignment, provide a Layout sheet with the contours plotted on the plan view. For a consultant-designed project, provide the cross sections used in the model.
3. For a crossing with roadway overflow, include the road plan and profile sheets so that the road profile can be reviewed.
4. For a larger-waterway crossing, include a Details sheet of the plan view with the contours plotted to the survey limits. This information will be used by the Department for review (consultant project) or the hydraulic analysis (in-house project).
5. If the project is consultant-designed, include the hydraulic analysis, scour computations, and recommendations for review. When stream modeling is required by IDNR for a Construction in a Floodway permit, the consultant should include the modeling checklist with the hydraulics submittal. The consultant needs to provide documentation that contact was made with the county surveyor's office to determine if the stream is a regulated drain.
6. The plans sheets will be for information purposes only, except for the Layout sheet which will include the preliminary structure geometrics.

7. The hydraulic analysis and scour calculations should be signed and sealed by a professional engineer licensed in Indiana.
8. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.0.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts. Copy from scoping report, if not included in the scoping report, complete the determination of significant work impacts, see Section 503-2.02. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02)
 - e. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),

14-2.04(02) Stage 1 Review Submission [Rev. Feb 2018, Mar. 2021]

Plans should be approximately 25% complete at this stage.

Place the proposed design information in the computer-aided details files for this submittal. This information will be submitted in pdf format. However, the plans need not be in final form. The designer should add notes to the plans explaining situations or items which are not readily apparent, and which may influence the proposed design. The notes should be removed for later submissions.

If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09).

The following sheets and information must be reviewed for quality assurance and included with this submission.

1. Conformance. Review the plans for conformance with the Level One controlling design criteria listed in Section 40-8.02(01) and indicate apparent or possible design exceptions. Also, indicate discrepancies from the Level Two design criteria listed in Section 40-8.02(02).

2. Abbreviated Engineering Assessment. Provide a written scope of the project requirements. This will be a short description of the design criteria proposed for use in the design of the project.
 - a. If an Abbreviated Engineering Assessment has been prepared, a copy should be included with the submission.

 - b. If an Abbreviated Engineering Assessment was not prepared, the designer should provide a brief written description of the project. This description will, at a minimum, include the information as follows:
 - (1) project location;
 - (2) project need and purpose;
 - (3) existing facility;
 - (4) traffic data;
 - (5) identification of proposal;
 - (6) cost estimate;
 - (7) environmental issues;
 - (8) right-of-way impact;
 - (9) traffic maintenance during construction.
 - (10) concurrence. For an INDOT project, signed by the district production director or the district planning director. For an LPA project, signed by the Project Sponsor.

- c. For a historic bridge, the HBAA may be submitted as the Abbreviated Engineering Assessment. Include documentation of concurrence from the Cultural Resources Office and the Bridge Engineering Office.

3. Level One Checklist and Computations. Include the information and computations as follows.
 - a. Level One Checklist. The designer should submit a Level One checklist, including computations, with each submission, for the mainline, each S-line, and each traffic-maintenance phase. The designer should include computations for the required intersection sight distance at each public road, including each local-service road or frontage road within the project limits. The designer should also submit documentation of the intersection sight distance provided at each public road. This requirement also applies to the traffic-maintenance phases.

The computations for the Level One items and intersection sight distance are to be initialed and dated by the designer and reviewer before submission.

 - b. design computations for determining the structure size and geometrics;

 - c. project-length computations including guardrail lengths and other contributing factors; and

 - d. waterway-opening calculations for each stream crossing.

4. Economic Analysis. Include a copy of structural economic analyses that may have been conducted to determine the most economic structural alternative. Guidelines for this analysis are listed in Section 59-5.0. A cost estimate should be provided for the selected alternative.

5. Title and Index Sheets. These should include the information as follows:
 - a. project number;

- b. description (des) number (include all des numbers akin to the project);
- c. bridge file number;
- d. county location map;
- e. project location map including north arrow and scales;
- f. description of the project work type and location;

**** PRACTICE POINTER ****

The location description should be simple and should follow the description on the schedule. For example, *Bridge replacement on State Road 67 over Fall Creek, located 8.00 miles southwest of the south junction with State Road 39, in Section 13, T-11-N, R-2-W, Ray Township, Morgan County, Indiana.* A legal description should not be used.

- g. design data including design speed, project design criteria, functional classification, terrain, and traffic data;
- h. applicable reference point (does not apply to local-agency project);
- i. signature blocks; the blocks will not be completed at this stage;
- j. latitude and longitude; and

- k. an index of plan sheets, as separate sheet 2, at this stage. Sheet numbers will change for future submittals.
6. Traffic-Maintenance Details. The conceptual traffic-maintenance strategy and phasing should be detailed.
7. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.
- a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts, see Section 503-2.02.
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Draft design exception request,
 - i. List of preferred mitigation measures, see Section 503-4.0.
8. Typical Cross Sections. Typical cross sections should only show basic configuration and design features. This will include the following:
- a. lane and shoulder widths;
 - b. profile grade, construction centerline, paper-relocation line, and survey line locations; and

- c. basic design features including curbs, sidewalks, pavement and shoulder cross slopes, side slopes, ditches, shoulder corrugations if warranted, etc.
9. Road Plan and Profile Sheets. At this project stage, these sheets will only include the preliminary design information. Some of the details that should be addressed include the following:
- a. plotting of existing topography should be complete;
 - b. beginning and end of project;
 - c. horizontal alignment (e.g., horizontal curve data, PC, PI, PT, bearings);
 - d. vertical alignment and its relationship to grade-controlling features;
 - e. preliminary drainage design including mainline culverts;
 - f. preliminary public-road approach and drive locations;
 - g. approximate construction limits; and
 - h. proposed guardrail limits.
10. Layout Sheet. This should include the preliminary design information for the following:
- a. existing-ground contours;
 - b. horizontal alignment;
 - c. vertical alignment;

- d. drainage structures;
- e. public-road approach and drive locations;
- f. approximate construction limits;
- g. plan view showing bridge centerline station and skew;
- h. proposed structure geometrics (span lengths and clear roadway widths in the title block);
- i. channel protection;
- j. utility owners;
- k. existing structure data; and
- l. hydraulic data.

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The scour elevation to be shown on the Layout sheet
should be the scour elevation for Q_{500} .

11. Channel-Change Layout Sheet. Include this sheet if the extent of the channel change is beyond the general layout. The sheet should include the preliminary design information for the following:

- a. stream profile;
- b. new channel geometrics;
- c. channel typical cross section; and
- d. slope protection.

12. General Plan Sheet. This should include the information as follows:

- a. plan view;
- d. elevation view;
- c. typical bridge cross section;
- d. design data. A note should be included which reads as follows:

- (1) Superstructure and substructure designed for HL-93 loading, in accordance with the *AASHTO LRFD Bridge Design Specifications*, ___*th* Edition, [current-edition year], and its subsequent interims.

Substructure foundation designed for HS-25 loading, in accordance with the *AASHTO Standard Specifications for Highway Bridges*, ___*th* Edition, [current-edition year], and its subsequent interims; or

- (2) Designed for HS-25 loading, in accordance with the AASHTO *Standard Specifications for Highway Bridges*, ___*th* Edition, [current-edition year], and its subsequent interims ; or
 - (3) Designed for HS-20 loading, in accordance with the AASHTO *Standard Specifications for Highway Bridges*, ___*th* Edition, [current-edition year], and its subsequent interims.
- e. suggested substructure type; and
 - f. minimum vertical clearance.
13. Cross Sections. The preliminary cross sections should include the following:
- a. templates of the typical sections placed on the existing cross sections;
 - b. profile grade elevations; and
 - c. drainage structures.
14. Design Information. In addition to the plans, the designer should include copies of the preliminary hydraulic analysis for each mainline culvert, if applicable, and results of economic analyses that may have been completed for alternative grade lines.
15. Preliminary Cost Estimate. This should be developed for the major pay items with percentages shown for the minor pay items.
16. INDOT All Project Commitments. Report. This should include all known resolutions.

14-2.04(03) Geotechnical Investigation Request and MSE Wall Initial Feasibility Review Submittal [Rev. Feb. 2021]

Upon approval of the Stage 1 Review Submission, the Geotechnical Investigation will be requested. If the project includes MSE walls, the Stage 1 plans are required to be submitted to the Geotechnical Services Division for the initial feasibility review of MSE walls at MSEWallShopDrawings@indot.in.gov. The plans sheets to be included with this request are as follows:

1. Title sheet;
2. Typical Sections sheet, including tabulation of subgrade-treatment information;
3. Details sheets. If the project requires a MSE wall, include a preliminary wall layout;
4. Roadway plan and profile sheets;
5. Layout sheet;
6. General Plan sheet. Include the anticipated foundation loads. If the structure requires pile loads in excess of 70 tons, the required pile capacity should be shown; and
7. Cross Section sheets.

14-2.04(04) Preliminary Field Check Meeting [Rev. Oct. 2018, Mar. 2021]

A Preliminary Field Check meeting should be held after the Stage One review submittal and prior to the Stage 2 review submittal. Plans sets should be distributed a minimum of three weeks prior to the meeting. The Traffic Control Plan Checklist should be coordinated with the appropriate district Traffic Engineer. See [Section 14-1.02\(03\)](#) for Field Check and Traffic Control Plan Checklist information.

To hold the Preliminary Field Check meeting, plans should be approximately 35% complete. The following sheets and information must be included.

1. Previous Reviews. Incorporate comments from previous reviews.
2. Index and Title Sheet.
3. Typical Cross Sections.
4. Plat Sheet. Include a preliminary Plat No. 1. See Section 85-2.0.
5. Road Plan and Profile Sheets. In addition to the information described in Section 14-2.04(02), show the following:
 - a. elevations and grades of ditches so that accurate right-of-way requirements can be determined;
 - b. construction limits;
 - c. proposed right of way including temporary right of way;
 - d. public-road approach and drive locations;
 - e. preliminary curb ramps, sidewalks, bicycle lanes, etc., if not shown on the Details Sheets;
 - f. drainage features (e.g., storm sewers, pipe structures, ditch grades); and
 - g. permanent erosion protection, including paved side ditches, riprap, or sodding limits.
6. Details Sheets. Include the preliminary layouts for the details as follows:

- a. roadway and shoulder layout for guardrail;
- b. special elements where applicable (e.g., modified approaches, signs, signals);
- c. intersection layout details including right- and left-turn lanes with the turning movements indicated; and
- d. superelevation transition diagrams.

If shoulder corrugations are warranted, and the plans include details for a non-standard public-road approach, drive, etc., each detail should show the extent of corrugations installation required in conjunction with the construction illustrated by the detail. If applicable, the INDOT *Standard Drawings* should be used as a guide in determining the limits of corrugations installation related to the feature shown in the detail.

- 7. Traffic-Maintenance Details. The conceptual traffic-maintenance strategy and phasing should be detailed. Traffic maintenance should be reviewed in the context of other projects and detour conditions, see Section 503-3.01(03) for more details. Plans should be developed to satisfy the project development process (PDP) Manual's Project Constructability Review 1 and Section 503-3.0
- 8. Road Summary Sheet. This preliminary sheet should include the following:
 - a. approach table with type, location, geometric data, and types of materials; and
 - b. Structure Data table with location, size, and type for each structure.
- 9. Cross Sections. See the information regarding cross sections in Section 14-2.04(02). Finalize the cross sections according to the revisions from the Stage 1 review plans. Also show the public-road approaches and drives.
- 10. Design Information. In addition to the plans, the designer should complete the following:

- a. initiate unique special provisions;
 - b. preliminary woody-revegetation determination; and
 - c. submit a request for the final pavement design to the Office of Pavement Engineering.
11. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.
- a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts, see Section 503-2.02.
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - h. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - i. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - j. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - k. Draft design exception request,
 - l. List of preferred mitigation measures, see Section 503-4.0.

14-2.04(05) Preliminary Right-of-Way Plans Preparation

See Chapter 85 for criteria and information that should be included with Right-of-Way Plans.

14-2.04(06) Stage 2 Review Submission [Rev. May 2017, Apr. 2020, Mar. 2021, Dec.2021, Jan. 2022]

Plans should be approximately 50% complete at this stage.

Plans for this submittal should be close to their final form. The plans sheets for this submittal should be legible and consistent with the quality desired for public viewing. The right-of-way plans should be consistent with the requirements of Chapter 85.

If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09).

A separate set of Stage 2 plans should be uploaded to ERMS for publication. The document title should use the *PlansPub* or *PlansXsectPub* description abbreviation.

The following sheets and information must be reviewed for quality assurance and should be included with this submission.

1. Previous Reviews. This submission should include the following:
 - a. marked-up plans from the previous submission;
 - b. document changes made from the Preliminary Field Check meeting;
 - c. revisions to the plans due to the Geotechnical Report, if completed; and
 - d. responses to field check questions.

2. Conformance. Review the plans for conformance with the Level One controlling design criteria listed in Section 40-8.02(01) and indicate apparent or possible design exceptions. Indicate discrepancies from the Level Two design criteria listed in Section 40-8.02(02). The required documentation for all Level One and Level Two design exceptions should be prepared.

3. Title and Index Sheets. Finalize the title sheet for right-of-way plans, and include the right-of-way index in a separate sheet 2.
4. Plat Sheets. All plat sheets, if required should be consistent with the plans and finalized.
Traffic Maintenance Details. Finalize all maintenance of traffic details including pedestrian and bicycle maintenance of traffic where required in accordance with Section 503-3.01.
5. Soil Borings Sheet. Ensure the information is accurate from the Geotechnical Report. Each boring log should include an elevation at each break in the soil strata. The elevations should be shown along the vertical grid so that the elevation of each soil sample can be ascertained. Logs for roadway borings should not be included on this sheet.

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Copies of the boring logs included in the Geotechnical Report may be scanned and placed onto the Soil Borings sheet, provided they are still legible once the plans are reduced to half-size.

6. Road Plan and Profile Sheets. Right-of-way should be finalized and consistent with the Details sheets. The sheets should include the information as follows:
 - a. drainage features (e.g., storm sewers, pipe structures, ditch grades, preliminary inlet spacing for storm-sewer trunk line design, etc.) and proposed drainage notes; and
 - b. permanent erosion protection, including paved side ditches, riprap, and sodding limits.

- c. Finalize curb ramps, sidewalks, bicycle lanes, etc., if not shown on the Details Sheets.
7. Layout Sheet. The Layout sheet should be essentially complete.
 8. General Plan Sheet. The General Plan sheet should be essentially complete.
 9. Road Summary Sheet.
 - a. Structure data table is in preliminary form and should include structure numbers and locations.
 - b. Approach table is in preliminary form and should include the approaches' design information.
 10. Cross Sections.
 11. Design Information. In addition to the construction plans, this submittal should include an updated cost estimate. The Department's cost-estimating procedures should be used for the preliminary construction cost estimate; see Chapter Twenty. Quantities will consist only of major pay items with a percentage added to consider minor pay items. If practical, the traffic-related pay items should be segregated.
 12. Level One Checklists and Design Computations. If there are no changes to the plans which affect Level One criteria since the prior submission, it is acceptable to copy the previous Level One Checklist, and add a statement that no changes have been made to the plans that affect Level One criteria. The statement should be initialed and dated for the current submission.

The designer should submit a Level One Checklist, including computations for the mainline, each S-line, and each traffic-maintenance phase. The designer should include computations for the required intersection sight distance at each public road, including each local-service road or frontage road within the project limits. The designer should also

submit documentation of the intersection sight distance provided at each public road. This requirement also applies to the traffic-maintenance phases.

13. Permit Information. This should be provided as required.
14. INDOT All Project Commitments Report. This should include all known resolutions.
15. Initiate Stormwater Quality Manager Determination. The designer should Provide initial Stormwater Quality Manager level recommendation on Transmittal Letter with brief explanation. The SWQM level starts at Level 1 and will be elevated to Level 2 based on meeting either the primary or secondary categories. SWQM Level determination guidance is available from the Department's Editable Documents webpage at <http://www.in.gov/dot/div/contracts/design/dmforms/>, under Environmental.
16. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts, see Section 503-2.02.
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Contract Provision Strategies, see Section 503-2.06,
 - i. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),

- j. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT)
 - k. Final design exception request,
 - l. Final mitigation measures, see Section 503-4.0.
17. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.
18. MSE Wall Design Review Checklist. If the project includes MSE walls, and the geotechnical soils investigations and the retaining wall plan sheets have been finalized, the relevant plan sheets and the completed MSE Wall Design Review checklist may be submitted to the Geotechnical Engineering Division for review at MSEWallShopDrawings@indot.IN.gov at this stage. The checklist is available for download from the Department's [Design Manual Editable Documents](#), under Geotechnical.

14-2.04(07) Hearing Plans Preparation (if necessary)

See [Section 14-2.01\(09\)](#).

14-2.04(08) Final Right-of-Way Plans Preparation

Chapter 85 provides the criteria and information that should be included with a set of right-of-way plans. This submission is not required for a local public agency project. The designer should review the instructions for quality assurance, and perform the following:

1. include the marked-up Preliminary Right-of-Way Plans with this submission, if required;
2. incorporate all revisions made during the Preliminary Right-of-Way Plans submission review;
3. complete all project-information boxes, including right-of-way project number and sheet numbers;

4. complete all sheet-numbers cross references; and
5. review the plans against the checklist shown as Figure 85-2F.

14-2.04(09) Stage 3 Review Submission [Rev. Feb 2012, May 2013, Apr 2017, May 2017, Nov. 2017, May 2020, Feb. 2021, Mar. 2021, Jun. 2021, Dec.2021]

Plans should be approximately 95% complete at this stage.

For this submittal, finalize the plans and include all roadway, traffic, and bridge details, and check the computations.

For a project that requires only a Stage 3 Submission, all documentation required for Stages 1 through Final Right-of-Way Plans Preparation , if not previously submitted, must be included in the Stage 3 submittal. Documentation will include the abbreviated Engineer's Assessment, geotechnical report, and pavement-design approval.

If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09).

Complete the following and review these elements for quality assurance.

1. Previous Reviews. Include the marked-up plans from the previous submittal with this submission.
2. Conformance. Review the plans for conformance with the Level One controlling design criteria listed in Section 40-8.02(01) and identify approval dates of design exceptions.
3. Pavement Design. Incorporate the final pavement design into the typical cross section and final quantities.

4. Computations and Quantities. Include the computations and quantities with this submission as follows:
 - a. final approach drainage design;
 - b. superstructure design;
 - c. end bent or abutment design;
 - d. interior substructure design;
 - e. bridge-seat elevations;
 - f. screeds at copings, profile grade, each beam line, and each construction joint;
 - g. superstructure quantities;
 - h. end-bent or abutment quantities;
 - i. interior substructure quantities;
 - j. pavement, curb, sidewalks, and related quantities;
 - k. drainage-structure quantities;
 - l. riprap, sodding, and seeding quantities;
 - m. earthwork quantities;
 - n. traffic-related items and designs as discussed and revised from Field Check Plans;
 - o. traffic-maintenance quantities;
 - p. miscellaneous roadway quantities;
 - q. updated construction cost estimate;
 - r. completed special provisions; and
 - s. erosion- and sediment-control features design.

5. Reports. Ensure that the recommendations from the hearing comments, Geotechnical Report, or other reports regarding peat, hazardous waste, special wastes, etc., have been incorporated into the plans, specifications, and cost estimate.

6. Plans. The plans should be nearly complete at this stage and should include the following.

- a. Title and Index Sheets. Complete the Design Data block and update the index as necessary.
- b. Typical Cross Sections. Add the final pavement design information.
- c. Plan and Profile Sheets. Ensure that structure notations are completed; sodding, riprap, and paved side ditch locations are indicated; earthwork balances are shown; and removal items identified. Right-of-way station offsets from the final right-of-way plans should be incorporated.
- d. Details Sheets. Ensure that all details are completed and included with this submission. This includes details for the following:
 - (1) reinforced-concrete bridge approach bill of materials and details;
 - (2) temporary erosion control;
 - (3) traffic-maintenance details; and
 - (4) traffic-design elements (e.g., intersections, signals, signing, or lighting).
- e. Bridge Sheets. Finalize the design for these sheets as follows.
 - (1) Soil Borings sheet.
 - (2) Layout sheet. Ensure that the riprap and sloped wall quantities are shown and the earthwork summary is completed.
 - (3) General Plan sheet.
 - (4) End Bent or Abutment Details.
 - (5) Interior Substructure Details.
 - (6) Superstructure Details.

f. Tables. Complete all data tables including the following:

- (1) Bridge Summary Table;
- (2) Structure Data Table;
- (3) Approach Table;
- (4) Underdrain Table;
- (5) Paved Side Ditch and Sodding Table;
- (6) Guardrail Table;
- (7) Sign Summary Table; and
- (8) Curb Ramps and Sidewalks Table if not detailed elsewhere.

f. Cross Sections. Design information should be essentially complete. This includes final structure notations, earthwork areas and volumes, and benching areas and volumes.

7. Special Provisions and Special Provision Menus. Compile all USPs submitted via SharePoint into a single Word document and submit via ERMS. This is to aid the Design Reviewer in viewing a comprehensive Stage 3 submission and does not replace the SharePoint process. See Chapter 19 for additional information on the unique special provision submittal and review process.

Compile all completed contract-specific recurring special provisions into a single Word document.

Complete the unique and recurring special provision menus.

8. Level One Checklists and Design Computations. If there are no changes to the plans which affect Level One criteria since the prior submission, it is acceptable to copy the previous Level One Checklist and add a statement that no changes have been made to the plans that affect Level One criteria. The statement should be initialed and dated for the current submission.

The designer should submit a Level One Checklist, including computations for the mainline, each S-line, and each traffic-maintenance phase. The designer should include computations for the required intersection sight distance at each public road, including each local-service road or frontage road within the project limits. The designer should also submit documentation of the intersection sight distance provided at each public road. This requirement also applies to the traffic-maintenance phases.

9. Environmental Consultation Form.
10. Rule 5 Submission. If required and not previously submitted, submit in accordance with Section 9-1.02.
11. Bridge Load Rating. Bridge load rating requests should be submitted through the Load Rating Request Application (LRRA), available through ITAP. Instructions for use are available for download from the [Bridge Design and Load Rating webpage](#), under Bridge Load Rating.
 - a. Department-Owned Bridge. For both tradition design-bid-build and alternate procurement methods such as design-build, the Bridges Division Load Rating Engineer completes the load rating for a Department-owned bridge.

Traditional Project Development. Bridge load rating requests should be submitted through LRRA. A separate set of bridge plans (excluding cross sections) should also be uploaded through the LRRA.

If the analysis shows an unacceptable rating, a notification will be sent from the LRRA denying the request. When a request is denied, design and plan revisions are required. A new request should be submitted with revised plans.

Alternate Procurement Project Development. Bridge Load Rating should be included as a hold point in the technical provisions. The bridge load rating should be requested through the LRRA upon completion of the design plans. The load rating must be completed prior to the approval of structural member working drawings. Where working drawings are not required, the load rating must be complete prior to work being performed on bridge elements.

- b. Local Public Agency (LPA) Bridge. A load rating request is not required for an LPA-owned bridge. The LPA is responsible for the load rating of an LPA-owned bridge in accordance with the INDOT [Bridge Inspection Manual](#). An INDOT-certified Load Rating Engineer (LRE) must complete the load rating.
 - c. Bridge-Length Structure Under Fill. A load rating request is not required for a precast bridge-length three-sided structure or box structure. Load rating for these structures is performed in accordance with the *Standard Specifications* as part of the working drawing submission process. A copy of the load rating submitted with the working drawings should be forwarded to the Department's Load Rating Engineer.
12. INDOT All Project Commitments Report. This should include all known resolutions.
 13. Foundation Review Form. This form is available for download from the Department's [Editable Documents webpage](#), under Bridges.
 14. MSE Wall Design Review Checklist. If the project includes MSE walls and the retaining wall plans were not finalized and submitted at Stage 2 along with the completed MSE Wall Design Review checklist (or the Stage 2 review comments have not been addressed to the satisfaction of Geotechnical Engineering Division), the relevant plan sheets and the completed MSE Wall Design Review checklist are required to be submitted to the Geotechnical Engineering Division for review at MSEWallShopDrawings@indot.IN.gov. The checklist is available for download from the Department's [Design Manual Editable Documents](#), under Geotechnical.
 15. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.
 16. Final Approved IHCP Request, if required. See Section 503-3.02.
 17. Final TMP Report for Significant Projects. See Section 503-2.0

14-2.04(10) Final Tracings Submission

See in [Section 14-1.02\(04\)](#).

14-2.04(11) Bridge within Limits of Road Project

Plans for a bridge which is complementary to plans for road work must be developed as described below. Each structure which is assigned a bridge file number must also be assigned a Des number.

1. INDOT-Route Project.
 - a. New or Replacement Beam or Slab Bridge. A separate set of plans should be developed for each bridge. However, plans for an overflow structure may be included in the set for the main-channel structure.
 - b. New or Replacement Three-Sided, Box, or Pipe Structure. These may be incorporated into the road plans. The structure file number and Des number for each such structure included in the road plans should be shown on the title sheet.

A separate set of plans with only one title sheet may be developed for one or more of these structures.

2. Local-Public-Agency Project. Bridge plans may be incorporated into road plans or developed as a separate set per the requirements of the local public agency. However, the structure file number and Des number for each structure included in the road plans should be shown on the road title sheet.

14-2.05 Bridge Plans, Preservation Project [Rev. Jan. 2013, Mar. 2016, Apr. 2017, Nov. 2017, May 2020, Mar. 2021, Sep. 2021]

A Bridge Preservation project can include work activities classified as either preventive maintenance or rehabilitation. See Chapter 412 for types of preservation treatments considered

preventive maintenance and treatments considered rehabilitation. The following may not be applicable to all Bridge Preservation projects and should be evaluated for each project individually.

Historic Bridges

Historic bridges require additional coordination and plan reviews in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the Indiana Department of Transportation, the Indiana State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Management and Preservation of Indiana's Historic Bridges (Historic Bridges PA)*. The *Historic Bridges PA* and a listing of Select and Non-Select bridges (inventory summary & results) are available on the [Indiana Historic Bridges Inventory website](#).

In accordance with the *Historic Bridges PA*, when any preservation option is selected as the preferred alternative for a historic bridge, the bridge owner is required to provide plans to the Indiana State Historic Preservation Officer (SHPO) when the design is approximately 30% complete (Stage 2 previously Preliminary Plans), approximately 60% complete (Hearing Plans), and when plans are 100% complete (Stage 3). If the project involves a bypass of the historic bridge, then the plan reviews will include a site plan and design of the new bridge and the historic bridge. The designer shall copy the Historic Bridge Specialist on all STAGE and PHRG submittals for Historic Bridges. The current Historic Bridge Specialist can be found within the organizational chart of the Environmental Division and related inquiries can be sent to INDOTHistoricBridges@indot.IN.gov.

The SHPO staff is allotted a 30-day comment period on each plan review. Additionally, each of these submittals are reviewed by Cultural Resources Office staff in the Division of Environmental Service before the plans are submitted to the SHPO staff and consulting parties. See 412-5.02 and the [INDOT Cultural Resources Manual](#), Part IV, Chapter 2 for more information.

Scour Analysis

See Section 412-2.0 for more information concerning scour analysis.

Load Rating

For a Preventive Maintenance project, the need for a load rating should be determined at the field inspection. Utilizing a Latex Modified Concrete (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.

For bridge preservation work included as part of a design-build or other alternate procurement method, bridge load rating must be included as a hold point in the technical provisions. The bridge load rating should be requested through the Load Rating Request Application (LRRRA) upon completion of the design plans. The load rating must be completed prior to the approval of structural member working drawings. Where working drawings are not required, the load rating must be complete prior to work being performed on bridge elements.

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) Stage 1 Review Submission (Initial Field Check and Bridge Preservation Document) [Rev. Mar. 2016, Feb. 2018, Oct. 2018, Mar. 2021]

An initial field check should be held for each Bridge Preservation project. The Traffic Control Plan Checklist, should be coordinated with the appropriate district Traffic Engineer. See [Section 14-1.02\(03\)](#) Traffic Control Plan Checklist information.

If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09).

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 Preservation Document. The content and format of the bridge preservation document will vary depending on the classification of the work as Preventive Maintenance or Rehabilitation, as well as the amount of information provided in the scoping documents provided by the District which may be attached as an appendix to the preservation report. Templates are available for a Bridge Rehabilitation Report and a Bridge Preventive Maintenance Meeting Minutes report on the the Department's [Editable Documents webpage](#), under Bridges. For a historic bridge, the Historic Bridge Alternative Analysis is submitted in lieu of a Bridge Rehabilitation Report or Bridge Preventive Maintenance Meeting Minutes. See Section 412-5.02.
 - a. Bridge Preventive Maintenance Project. Bridge Preventive Maintenance Meeting Minutes are submitted in lieu of the Bridge Rehabilitation Report. Multiple bridges within a single contract may be submitted in the same report.

 - b. Bridge Rehabilitation Project. A Bridge Rehabilitation Report should be completed for each crossing.

3. Level One Design Exception Request and Documentation. As required for Rehabilitation projects. Evaluation of Level One controlling criteria is not required for Preventive 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 Preventive 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 Preventive Maintenance projects.

5. Traffic-Maintenance Details. The conceptual traffic-maintenance strategy and phasing should be detailed.

6. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence,
 - c. Determination of Significant Work Zone Impacts, if not included in the scoping report, complete the determination of significant work impacts, see 503-2.02,
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Contract Provision Strategies, see Section 503-2.06
 - i. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - j. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT)
 - k. Draft design exception request,
 - l. List of preferred mitigation measures, see Section 503-4.0.

14-2.05(02) Design Approval [Rev. Mar. 2016, Rev. Feb. 2018]

Once the Bridge Rehabilitation Report or Bridge Preventive Maintenance Meeting Minutes have been reviewed and approved, the designer will be requested to proceed to the Stage 2 Review (Preliminary Plans) submission.

A bridge determined to be historic, whether select or non-select, will require completion of a Historic Bridge Alternatives Analysis (HBAA) in place of the Bridge Rehabilitation Report or Bridge Preventive Maintenance Bridge Scoping Report. The designer will not commence with the subsequent milestone submittals in this section until Environmental Services Division Office of

Cultural Services and the Bridges Division Engineering Division has reviewed the HBAA and provided concurrence with the proposed project scope. The list of Select and Non-select bridges is available from the Department's Historic Bridge Inventory Summary & Results webpage at <http://www.in.gov/indot/2531.htm>, under Completed Inventory Documents (Volume 4).

14-2.05(03) Stage 2 Review Submission (Preliminary Plans) [Rev. Mar. 2016, Apr. 2020, Feb. 2021, Mar. 2021, Jun. 2021, Sep. 2021, Jan. 2022]

A Stage 2 submission is required for all Rehabilitation projects. For Preventive Maintenance projects, the designer may make a Stage 3 level submission at the time of Stage 2 and skip Stage 3 at the discretion of the Bridge Engineering Division reviewer. The designer should note on the transmittal letter and on the title sheet of the plans the desire to have the submission checked as a Stage 3. If the designer does not have all the necessary information included, a Stage 3 submittal may still be required

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

If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09).

A separate set of Stage 2 plans should be uploaded to ERMS for publication. The document title should use the *PlansPub* or *PlansXsectPub* description abbreviation.

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 Preventive 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. Traffic Maintenance Details. Finalize all maintenance of traffic details including pedestrian and bicycle maintenance of traffic where required in accordance with Section 503-3.01. 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.
- d. 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.
- e. 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 Rehabilitation Report.
3. Plan Set, Preventive Maintenance project. Preventive Maintenance projects may be developed on letter-sized plan sheets. If a Preventive 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. Traffic Maintenance Details. Finalize all maintenance of traffic details including pedestrian and bicycle maintenance of traffic where required in accordance with Section 503-3.01.
 - d. Detail Sheets. Include preventive maintenance treatment details and other details not covered by the *Standard Drawings*.
 - e. Summary tables should be provided for MOT items, pavement markings, and bridge quantities. MOT summary tables may be included on the MOT Details sheets.
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 Preventive 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.
6. 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.

7. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts, see Section 503-2.02.
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Contract Provision Strategies, see Section 503-2.06,
 - i. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - j. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT)
 - k. Final design exception request,
 - l. Final mitigation measures, see Section 503-4.0.
8. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.
9. Scour Analysis Memo. Include the approval letter from the Office of Hydraulics, where applicable.

10. Unique Special Provisions. Begin coordination for unique special provisions and unique pay items. See Chapter 19 for information on developing and submitting unique special provisions.
11. Proprietary Materials. Submit justification for the use of proprietary materials. See Chapter 17.
12. Cost Estimate.
13. Permits Determination Request. For both Rehabilitation and Preventive Maintenance projects, the designer should coordinate with the Waterway Permitting Office to establish the need for a permits determination and items to be submitted.
14. Initiate Stormwater Quality Manager Determination. If possible, the designer should provide initial Stormwater Quality Manager level recommendation. Otherwise submit with Final Plans. See section [14-2.04\(06\)](#).

Additional Stage 2 (Preliminary Plans) Information

For historic bridges, the designer should coordinate with the project manager to have Stage 2 plans reviewed by the Cultural Resources Office staff in the Division of Environmental Service before they are submitted to the Indiana State Historic Preservation Officer (SHPO) staff to fulfill the 30% complete plan review requirement under the *Historic Bridges PA*. See 412-5.02 and the INDOT Cultural Resources Manual, Part IV, Chapter 2 for more information.

Upon approval of the Stage 2 submittal a geotechnical investigation request should be submitted. If a geotechnical investigation is not required a Geotechnical Waiver should be obtained. If the project includes MSE walls, the Preliminary Plans are required to be submitted to the Geotechnical Services Division for the initial feasibility review of MSE walls at MSEWallShopDrawings@indot.IN.gov.

Upon completion of the Stage 2 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 [Waterway Permitting Manual](#).

If possible the designer should provide initial Stormwater Quality Manager Level recommendation as early as possible on Transmittal Letter with brief explanation. The SWQM level starts at Level 1 and will be elevated to Level 2 based on meeting either the primary or secondary categories. SWQM Level determination guidance is available from the Department's [Editable Documents webpage](#), under Environmental.

14-2.05(04) Hearing Plans Preparation [Rev. Mar. 2016, Apr. 2017, Nov. 2017, May 2020, Feb. 2021, Mar. 2021, Jun. 2021, Sep. 2021]

A public hearing is required for all historic bridge projects processed through the *Programmatic Agreement Among the Federal Highway Administration, the Indiana Department of Transportation, the Indiana State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Management and Preservation of Indiana's Historic Bridges (Historic Bridges PA)*. See the requirements listed in Section 14-2.01(09).

For historic bridges, the designer should coordinate with the project manager to have hearing plans reviewed by the Cultural Resources Office staff in the Division of Environmental Service before they are submitted to the Indiana State Historic Preservation Officer (SHPO) staff to fulfill the 60% complete plan review requirement under the *Historic Bridges PA*. See 412-5.02 and the [INDOT Cultural Resources Manual](#), Part IC, Chapter 2 for more information.

14-2.05(05) Stage 3 Review Submission (Final Plans) [Rev. Mar. 2016, Sep. 2021, Dec. 2021]

The following should be reviewed in accordance with quality assurance procedures and included in this submission. Information required for the Stage 2 (Preliminary Plans) Submission should be included in this submission, if not previously submitted. If the project includes traffic signal(s), signing, or lighting details a separate set of plans should be submitted into ERMS for traffic review in accordance with Section 14-1.02(09).

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 Stage 2 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 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. Traffic Maintenance Details. Finalized 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 and Special Provision Menus. Compile all USPs submitted via SharePoint into a single Word document and submit via ERMS. This is to aid the Design Reviewer in viewing a comprehensive Stage 3 submission and does not replace the SharePoint process. See Chapter 19 for additional information on the USP submittal and review process.

Compile all completed contract-specific recurring special provisions into a single Word document.

Complete the unique and recurring special provision menus.

8. Geotechnical Report. Include the report or indicate its location within ERMS in the transmittal letter.
9. MSE Wall Design Review Checklist. If the project included MSE walls, the relevant plan sheets and the completed MSE Wall Design Review checklist are required to be submitted to the Geotechnical Services Division for review at MSEWallShopDrawings@indot.IN.gov. The checklist is available for download from the Geotechnical Review of Final Check Prints Form. This form is available for download from the Department's [Editable Documents webpage](#), under Geotechnical.
10. Geotechnical Review of Final Check Prints Form. This form is available for download from the Department's [Design Manual Editable Documents](#), 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.
11. Foundation Review Form. This form is available for download from the Department's [Editable Documents webpage](#), under Bridges.
12. Environmental Document. Indicate the status or the location within ERMS in the transmittal letter.
13. Environmental Consultation Form. This form is available for download from the Department's [Editable Documents webpage](#), under Environmental.
14. 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.
15. 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 know resolutions should be included.
16. Initiate Stormwater Quality Manager Determination. The designer should Provide initial Stormwater Quality Manager level recommendation on Transmittal Letter with brief

explanation. The SWQM level starts at Level 1 and will be elevated to Level 2 based on meeting either the primary or secondary categories. SWQM Level determination guidance is available from the Department's [Editable Documents webpage](#), under Environmental.

17. Level One Controlling Criteria Checklist and Design Computations. For a Preventive 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.
18. Load Rating. See Section 14-2.04(09)
19. 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.
20. Asbestos Report.
21. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.
22. Final Approved IHCP Request, if required. See Section 503-3.02.
23. Final TMP Report for Significant Projects. See Section 503-2.0

Additional Stage 3 (Final Plans) Information

For historic bridges, the designer should coordinate with the project manager to have final plans reviewed by the Cultural Resources Office staff in the Division of Environmental Service staff before they are submitted to the Indiana State Historic Preservation Officer (SHPO) staff to fulfill the final plan review requirement under the *Historic Bridges PA*. See 412-5.02 and the [INDOT Cultural Resources Manual](#), Part IV, Chapter 2 for more information.

14-2.05(06) Final Field Check [Rev. Sep. 2019]

A final field check is at the discretion of the project manager in consultation with the Bridge Engineering Division 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(07) Final Tracings Submission [New Sep. 2019]

All revisions resulting from the Final Field Check and Stage 3 review will be completed for this submission. See the requirements listed in Section 14-1.02(04). Any significant changes to the project between Stage 3 and Final Tracings should be reviewed by the Bridge Engineering Division. The designer should coordinate with the INDOT Reviewer of the Stage 1 submittal and the Project Manager to coordinate the additional review.

14-2.06 Traffic Plans, Signing Project [Rev. Mar. 2021]

The checklists included in the following sections are intended for standalone traffic projects. Where traffic details, e.g. signal, signage, or lighting, are to be included in a set of road plans, see Section 14-1.02(09) for review procedure guidance.

**** PRACTICE POINTER ****

Existing traffic-signs plans for a non-Interstate route are not required unless instructed otherwise.

14-2.06(01) Stage 1 Review Submission (Preliminary Plans) [Rev. Mar. 2021]

The plans should be approximately 25% complete at this stage.

The following sheets and information must be reviewed for quality assurance and included with this submission:

1. Signs Plans Sheets:
 - a. all existing sign structures and signs, if any;
 - b. mainline geometry and all intersecting roadways;
 - c. mainline and each intersecting roadway labeled
 - d. centerline stationing; and
 - e. North arrow on each sheet
2. Traffic-Maintenance Details. The conceptual traffic-maintenance strategy and phasing should be detailed.
3. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.

- a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
- b. TMP meeting minutes or other correspondence.
- c. Determination of Significant Work Zone Impacts. Copy from scoping report, if not included in the scoping report, complete the determination of significant work impacts, see Section 503-2.02.
- d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
- e. Draft IHCP exception request, where required, see Section 503-3.02,
- f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
- g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
- h. Contract Provision Strategies, see Section 503-2.06
- i. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
- j. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT)
- k. Draft design exception request, see Section 503-4.0,
- l. List of preferred mitigation measures, see Section 503-4.0.

14-2.06(02) Stage 2 Review Submission (Preliminary Field Check Plans) [Rev. Mar. 2021, Jan. 2022]

The plans should be approximately 55% complete at this stage.

A separate set of Stage 2 plans should be uploaded to ERMS for publication. The document title should use the *PlansPub* or *PlansXsectPub* description abbreviation.

The following sheets and information must be reviewed for quality assurance and included with this submission:

1. Title Sheet. Include the layout map and show the project location on the location map.
2. Index and General Notes Sheet. The index blocks should be completed to indicate the sheet numbers for the plans at this stage. The sheet numbers will change for future submittals.
3. Traffic Maintenance Details. Finalize all maintenance of traffic details including pedestrian and bicycle maintenance of traffic where required in accordance with Section 503-3.01.
4. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless it is not required. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts, see Section 503-2.02.
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Contract Provision Strategies, see Section 503-2.06,
 - i. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - j. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT).
 - k. Final design exception approvals,
 - l. Final mitigation measures, see Section 503-4.0.
5. Signs Plans Sheets. These sheets should include the information as follows:

- a. plan view of the roadway;
 - b. route numbers and street names;
 - c. right-of-way limits;
 - d. north arrow;
 - e. stationing, identification number, and message of all existing sheet signs, ground-mounted panel signs, and overhead panel signs;
 - f. stationing and identification number of each proposed sign;
 - g. proposed panel-sign messages; and
 - h. the applicable legend; see Section 14-3.04.
6. Sign Summary Table. The sign location (station) and type (sign code) should be shown. However, the sign size, summary, and post size need not be completed at this stage.
 7. INDOT All Project Commitments Report. This should include all known resolutions.
 8. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.

14-2.06(03) Stage 3 Review Submission (Final Field Check Plans) [Rev. Mar. 2021, Jun. 2021]

Plans should be approximately 95% complete at this stage.

The following sheets and information must be reviewed for quality assurance and included with this submission.

1. Title Sheet. This sheet should be essentially complete except for signatures.
2. Index and General Notes Sheet. This sheet should include a list of all utilities and a complete list of general notes.
3. Existing Signs Plans Sheets. These sheets will provide the stationing, identification number, and message for each existing sign.
4. Proposed Signs Plans Sheets. In addition to the criteria for Preliminary Field Check plan sheets, these sheets should include the information for overhead-sign lighting as follows:
 - a. service point;
 - b. cable duct;
 - c. cable duct marker; and
 - d. handhole.
5. Sign Layout Sheets. These sheets should include the following:
 - a. size of sign;
 - b. sign border;
 - c. corner radii;
 - d. height of message or legend;
 - e. stationing and identification number;
 - f. code for route shield;
 - h. size of arrow and degree of slant; and
 - g. notation for special color combinations (e.g., black copy on yellow background).

6. Cross-Sections. These sheets should include the following:
- a. for each box truss, monotube span, tri-cord, or cable-span structure, the full roadway cross section;
 - b. for each cantilever structure, half cross section from the lane lines for a multilane facility or the centerline for a 2-lane facility to the front slope;
 - c. for each ground-mounted panel sign, the cross section from the edge of the traveled way to the right-of-way line;
 - d. Cross section sheets for each ground-mounted panel sign will include the following:
 - (1) size of sign;
 - (2) sign message;
 - (3) size and length of posts;
 - (4) horizontal clearance from the edge of traveled way;
 - (5) Clear Zone / OFZ offset from the edge of the travelled way.
 - (6) vertical clearance from the edge of traveled way or ground line to the bottom of the sign;
 - (7) footing type and dimensions;
 - (8) identification number; and
 - (9) stationing.
 - e. Cross section sheets for each overhead-sign structure will include the following:
 - (1) size of sign; total sign area on each structure
 - (2) legend;
 - (3) structure type and its dimensions;
 - (4) foundation type, standard or special design
 - (5) identification number;
 - (6) stationing; and
 - (7) type of roadside protection.
7. Details Sheets. The details sheets to be included are as follows:

- a. completed Sign Summary Table;
 - b. proposed route-marker-assembly details;
 - c. sheet sign details;
 - d. traffic sign details;
 - e. foundation details; and
 - f. any special design details.
8. Design Computations. This should include any calculations, e.g. non-standard structure foundation or guardrail calculations for shielding.
9. Special Provisions and Special Provision Menus. Compile all USPs submitted via SharePoint into a single Word document and submit via ERMS. This is to aid the Design Reviewer in viewing a comprehensive Stage 3 submission and does not replace the SharePoint process. See Chapter 19 for additional information on the USP submittal and review process.

Compile all completed contract-specific recurring special provisions into a single Word document.

Complete the unique and recurring special provision menus.

10. Cost Estimate. Conduct a detailed review to ensure that all necessary pay items have been included. Finalize the construction cost estimate using Estimator.
11. INDOT All Project Commitments Report. This should include all known resolutions.
12. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.
13. Final Approved IHCP Request, if required. See Section 503-3.02.

14. Final TMP Report for Significant Projects. See Section 503-2.0

14-2.06(04) Final Tracings Submission

The Final Plans submittal will include all necessary revisions from the Final Check Prints submittal. See [Section 14-1.02\(04\)](#) for Final Tracings.

14-2.07 Traffic Plans, Signalization Project [Rev. Mar. 2021]

The checklists included in the following sections are intended for standalone traffic projects. Where traffic details, e.g. signal, signage, or lighting, are to be included in a set of road plans, see Section 14-1.02(09) for review procedure guidance.

14-2.07(01) Stage 1 Review Submission (Preliminary Plans) [Rev. Mar. 2021]

The plans should be approximately 25% complete at this stage.

The following sheets and information must be reviewed for quality assurance and included with this submission:

1. Signalization Plan Sheets.
 - a. all existing signal equipment, if any;
 - b. mainline geometry and all intersecting roadways;
 - c. mainline and each intersecting roadway labeled
 - d. centerline stationing; and
 - e. North arrow on each sheet

2. Traffic-Maintenance Details. The conceptual traffic-maintenance strategy and phasing should be detailed.

3. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.
- a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts. Copy from scoping report, if not included in the scoping report, complete the determination of significant work impacts, see Section 503-2.02.
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Contract Provision Strategies, see Section 503-2.06
 - h. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - i. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT)
 - j. Draft design exception request,
 - k. List of preferred mitigation measures, see Section 503-4.0.

14-2.07(02) Stage 2 Review Submission (Preliminary Field Check Plans) [Rev. Mar. 2021, Jan. 2022]

The plans should be approximately 55% complete at this stage.

A separate set of Stage 2 plans should be uploaded to ERMS for publication. The document title should use the *PlansPub* or *PlansXsectPub* description abbreviation.

The following sheets and information must be reviewed for quality assurance and included with this submission.

1. Title Sheet. Include the layout map and show the project location on the location map.
2. Index and General Notes Sheet. The index block should be completed to indicate the sheet numbers for the plans at this stage. The sheet numbers will change for future submittals.
3. Traffic Maintenance Details. Finalize all maintenance of traffic details including pedestrian and bicycle maintenance of traffic where required in accordance with Section 503-3.01.
4. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts. Copy from scoping report, if not included in the scoping report, complete the determination of significant work impacts, see Section 503-2.02.
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Contract Provision Strategies, see Section 503-2.06
 - h. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - i. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT)
 - j. Final design exception request,
 - k. Final preferred mitigation measures, see Section 503-4.0.

5. Signalization Plan Sheets. These sheets should include the information as follows:
- a. plan view of the intersection including intersection geometrics, curbs, shoulders, and building lines; pedestrian crossings if any and proposed pavement markings for minimum 100 Ft on each leg of intersection
 - b. ADA curb ramp details with push button details and cross-sections
 - c. route numbers and street names;
 - d. right-of-way limits;
 - e. north arrow;
 - f. commission number for signal (State highway only);
 - g. all existing features (e.g., controller cabinets, signal poles, mast arms, foundations, sidewalks, curbs, pavement markings, utilities, etc.);
 - h. proposed signal installations (e.g., types of signal supports, location of controller cabinet, pavement markings, lane restrictions, intersection dimensions, roadway width, position and direction of signal heads, phase diagram, loop tagging table, detector locations, conduit locations, number of wires in each cable run, power service location, detector housing, hand holes, disconnect hangers, ADA curb ramps with pedestrian push button details if applicable.);
 - i. Signal cantilever structure cross-sections with foundation details if any.
 - j. Railroad preemption phase diagram if applicable
 - k. other applicable information includes the location of any pertinent signs, panel sign messages, approaches near the intersection, bus stops and loading zones, drainage structures, curb ramps, and utilities;

- l. the applicable legend; see Section 14-3.04; and
 - m. posted speed limit.
6. Signal Cantilever Structure Cross Section, if any.
- a. size and length of posts;
 - b. horizontal clearance from the edge of traveled way;
 - c. Clear Zone / OFZ offset from the edge of the travelled way.
 - d. vertical clearance from the edge of traveled way or ground line to the bottom of the sign;
 - e. footing type and dimensions;
 - f. identification number; and
 - g. stationing.
7. Proprietary Material Use Justification Form. This form should be completed and submitted for review and approval. See Chapter 17.
8. INDOT All Project Commitments Report. This should include all known resolutions.
9. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.

14-2.07(03) Stage 3 Review Submission (Final Field Check Plans) [Rev. Mar. 2021, Jun. 2021]

Plans should be approximately 95% complete at this stage.

The following sheets and information must be reviewed for quality assurance and included with this submission.

1. Title Sheet. This sheet should be essentially complete except for signatures.
2. Index and General Notes Sheet. This sheet should include a list of all utilities and a complete list of general notes.
3. Signalization Plan Sheets. Include all revisions from the Stage 2 and finalize the sheets.
4. Details Sheets. All necessary details sheets should be included with this submission.
5. INDOT All Project Commitments Report. This should include all known resolutions.
6. Design Computations. This should include any calculations, e.g. guardrail calculations for shielding.
7. Special Provisions and Special Provision Menus. Compile all USPs submitted via SharePoint into a single Word document and submit via ERMS. This is to aid the Design Reviewer in viewing a comprehensive Stage 3 submission and does not replace the SharePoint process. See Chapter 19 for additional information on the USP submittal and review process.

Compile all completed contract-specific recurring special provisions into a single Word document.

Complete the unique and recurring special provision menus.

8. Cost Estimate. Conduct a detailed review to ensure that all necessary pay items have been included. Finalize the construction cost estimate using Estimator.
9. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.

10. Final Approved IHCP Request, if required. See Section 503-3.02.
11. Final TMP Report for Significant Projects. See Section 503-2.0

14-2.07(04) Final Tracings Submission [Rev. Jun. 2021]

The Final Plans submittal will include all necessary revisions from the Final Check Prints submittal. See [Section 14-1.02\(04\)](#) for Final Tracings.

14-2.08 Traffic Plans, Lighting Project [Rev. Mar. 2021]

The checklists included in the following sections are intended for standalone traffic projects. Where traffic details, e.g. signal, signage, or lighting, are to be included in a set of road plans, see Section 14-1.02(09) for review procedure guidance.

14-2.08(01) Stage 1 Review Submission (Preliminary Plans) [Rev. Mar. 2021]

The plans should be approximately 25% complete at this stage. The following sheets and information must be reviewed for quality assurance and included with this submission:

1. Lighting Plans Sheets.
 - a. all existing lighting installations, if any;
 - b. mainline geometry and all intersecting roadways;
 - c. mainline and each intersecting roadway labeled
 - d. centerline stationing; and
 - e. North arrow on each sheet
2. Visual/AGi32 Roadway Lighting Design model file if available.

3. Traffic-Maintenance Details. The conceptual traffic-maintenance strategy and phasing should be detailed.

4. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless not it is not required. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts. Copy from scoping report, if not included in the scoping report, complete the determination of significant work impacts, see Section 503-2.02.
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Contract Provision Strategies, see Section 503-2.06
 - a. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - b. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT)
 - i. Draft design exception request,
 - j. List of preferred mitigation measures, see Section 503-4.0.

14-2.08(02) Stage 2 Review Submission(Preliminary Field Check Plans) [Rev. Mar. 2021, Jan. 2022]

The plans should be approximately 55% complete at this stage.

A separate set of Stage 2 plans should be uploaded to ERMS for publication. The document title should use the *PlansPub* or *PlansXsectPub* description abbreviation.

The following sheets and information must be reviewed for quality assurance and included with this submission.

1. Title Sheet. Include the layout map and show the project location on the location map.
2. Index and General Notes Sheet. This sheet should include a list of all utilities and a complete list of general notes. The index block should be completed to indicate the sheet numbers for the plans at this stage. The sheet numbers will change for future submittals.
3. Traffic Maintenance Details. Finalize all maintenance of traffic details including pedestrian and bicycle maintenance of traffic where required in accordance with Section 503-3.01.
4. Draft TMP Report for Significant Projects. The following documents should be included in the draft TMP Report unless it is not required. Where a document is not required, reasoning should be noted.
 - a. TMP Team. The designer should provide a list of the TMP Team members and contact information, including all stakeholders, see Section 503-2.04.
 - b. TMP meeting minutes or other correspondence.
 - c. Determination of Significant Work Zone Impacts, see Section 503-2.02.
 - d. Approved Traffic Control Strategy memo, see Section 503-2.05(02),
 - e. Draft IHCP exception request, where required, see Section 503-3.02,
 - f. Detour Worksheet (Non-Interstate or Interstate), Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - g. Crossover and Runaround Viability Worksheet, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - h. Contract Provision Strategies, see Section 503-2.06,

- i. Temporary Signal Type Determination, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT),
 - j. Draft Programming Information for Portable Changeable Message Sign, Design Manual Editable Documents Webpage, under Traffic Maintenance (MOT)
 - k. Final design exception approvals,
 - l. Final mitigation measures, see Section 503-4.0.
5. Lighting Plans Sheets. These sheets should include the information as follows:
- a. plan view of the roadway;
 - b. route numbers and street names;
 - c. right-of-way limits;
 - d. north arrow;
 - e. stationing and identification number of proposed light standards;
 - f. identification of overhead-sign lighting, if required;
 - g. applicable legend; see Section 14-3.04; and
 - h. service point location and type.
 - i. electrical circuit run
6. Design Data. The following design data to be included is as follows:
- a. initial lamp lumens;
 - b. average maintained illumination;
 - c. lamp lumens depreciation factor;
 - d. luminaire dirt depreciation factor;
 - e. uniformity ratio;
 - f. mounting height;
 - g. luminaire classification; and
 - h. pavement classification

7. INDOT All Project Commitments Report. This should include all known resolutions.
8. Proprietary Material Use Justification Form. This form should be completed and submitted for review and approval. See Chapter 17.
9. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.
10. Visual/AGi32 Roadway Lighting Design model file.

14-2.08(03) Stage 3 Review Submission (Final Field Check Plans) [Rev. Mar. 2021, Jun. 2021]

Plans should be approximately 95% complete at this stage.

The following sheets and information must be reviewed for quality assurance and included with this submission.

1. Title Sheet. This sheet should be essentially complete except for signatures.
2. Index and General Notes Sheet. This sheet should include a list of all utilities and a complete list of general notes. The index block should be completed to indicate the sheet numbers for the plans.
3. Lighting Plans Sheets. In addition to the criteria for Stage 2 plans, these sheets should include the following:
 - a. cable duct;
 - b. circuit number;
 - c. cable duct marker, if required;

- d. handhole, if required; and
 - e. main breaker and circuit breaker rating.
4. Summary Table. This should include the following:
- a. luminaire or tower number;
 - b. connection type;
 - c. circuit connection;
 - d. pole set-back distance from edge of traveled way, taper, or ramp;
 - e. mast-arm length (conventional lighting);
 - f. luminaire effective mounting height (E.M.H.); and
 - g. top foundation elevation with respect to the edge of traveled way.
5. High-Mast Tower Plans. These should include the details as follows:
- a. pole data schedule;
 - b. highway illumination tower detail;
 - c. high-mast tower miscellaneous details;
 - d. external winch concrete pad;
 - e. lightning rod typical details; and
 - f. tower retrofit details, if required.
6. Design Computations. This should include any calculations, e.g. voltage drop and breaker rating calculations or guardrail calculations for shielding.
7. Special Provisions and Special Provision Menus. Compile all USPs submitted via SharePoint into a single Word document and submit via ERMS. This is to aid the Design Reviewer in viewing a comprehensive Stage 3 submission and does not replace the SharePoint process. See Chapter 19 for additional information on the USP submittal and review process.

Compile all completed contract-specific recurring special provisions into a single Word document.

Complete the unique and recurring special provision menus.

8. Cost Estimate. Conduct a detailed review to ensure that all necessary pay items have been included. Finalize the construction cost estimate using Estimator.
9. Visual/AGi32 Roadway Lighting Design Model File.
10. INDOT All Project Commitments Report. This should include all known resolutions.
11. Traffic Control Plan Checklist. See [Section 14-1.02\(03\)](#) for Traffic Control Plan Checklist information.
12. Final Approved IHCP Request, if required. See Section 503-3.02.
13. Final TMP Report for Significant Projects. See Section 503-2.0

14-2.08(05) Final Tracings Submission

This submittal will include all necessary revisions from the Final Check Prints submittal. Section 14-1.02(04) discusses what is required for this submission.

14-2.09 Sidewalk and Curb Ramps Project [Rev. Jan. 2013]

This section applies to all sidewalk projects, including Safe Routes to School Projects. See Chapter 51 for sidewalk design criteria. The plans should consist of the information as follows.

1. Title Sheet.

- a. Project type as sidewalk
- b. Brief project location description
- c. Des number and project number
- d. Latitude and longitude

2. Index Sheet.

- a. Plans sheets index
- b. Utilities information
- c. Revision block

3. Traffic Maintenance Details. These should be included as needed.

4. Typical Cross Section Sheet.

- a. Sidewalk width and cross slope
- b. Location of sidewalk relative to adjacent travel lane
- c. Widths of travel lanes

5. Plan and Profile Sheets.

- a. Existing curbs and separations
- b. Protruding objects such as fire hydrants or utility poles, with horizontal and vertical clearances

- c. Profile Grade survey (PG)
- d. Widths of all existing and proposed sidewalks
- e. Proposed longitudinal sidewalk grade

6. Detail Sheets.

- a. Curb ramp locations and detailed or tabulated component design criteria for each curb ramp, e.g. widths, length, cross slopes, running slopes and flared slope.

7. Cross Sections. These should be included as needed

14-3.0 DRAFTING GUIDELINES

14-3.01 Drafting Methods

All project drafting will be performed using Microstation. The *INDOT CADD System User Guide* provides information on the Department's Microstation system. For a consultant not using INDOT's Microstation system, Chapter 16, once developed, will provide the Department's criteria for translating the CADD files to the Department's system.

The Department's preferred practice is to use only Microstation drafting. However, for a small in-house or consultant-designed project, manual drafting may be acceptable. For a manually-drafted project, the designer/drafter should use the criteria described in the *INDOT CADD System User Guide*, for line weights, topography symbols, plotting accuracy, etc.

Where manual plotting is used, the drafter must consider line weights and text sizes to ensure that, once the plans size is reduced, the plans will still be readable. The minimum text should be at least 5/8 in. height. Letters should be open and formed with a dense but not wide line.

14-3.02 Plotting Survey Data

The designer is responsible for plotting all survey data received as an electronic file. The *INDOT CADD System User Guide* discusses how to plot the survey data. Each consultant should plot the survey data according to the procedures provided with the CADD software package.

In plotting survey data, the following accuracies should be used to show elements on the plans sheets.

1. Show horizontal alignment data (e.g., curve information, equations, reference-point tie-ins, section corner tie-ins) to the nearer 0.01 ft.
2. Show existing roadway elevations used for pavement tie-ins and vertical clearance computations to the nearer 0.1 ft. Show benchmark elevations to the nearer 0.01 ft.
3. Horizontal pluses, offsets, physical feature dimensions, and locations, etc., may be shown to either the nearer 0.05 ft or 0.01 ft. The nearer 0.01-ft accuracy is preferred.
4. The survey should be plotted for 300 ft beyond the project limits. At a minimum, the survey should be plotted for 150 ft beyond the project limits.

14-3.03 Sheet Size [Rev. Apr. 2012, July 2012, Mar. 2016]

The plans-sheet sizes which may be used are as follows.

1. 8½ in. by 11 in. This size may be used for a partial 3R or other type of project that does not require a significant amount of detail. This size may be used only if there are 100 pages (50 sheets double-sided) or fewer. File size is limited to 10 Mb.
2. 24 in. by 36 in. or 22 in. by 34 in. Full size plans should be used where mark ups will be applied to as-built plans, when complex design elements are shown, and when larger drawings

are needed to provide legibility. The same sheet size should be used for all sheets in a set of plans. File size is limited to 50 Mb.

3. 11 in. by 17 in. Plans sheets should not be initially developed, and final tracings should not be submitted, in this size. Plans sheets of 24 in. by 36 in., if reduced to this size, will not be exactly at half scale. Such plans sheets may be reduced to this size during the development or construction processes for use convenience. Final tracings submitted in this size will be rejected and a resubmission as 24 in. by 36 in. or 22 in. by 34 in. sheets will be required.

14-3.04 General Guidelines

The following provides general guidelines for plotting survey data and design details on the plan sheets.

14-3.04(01) Dimensions

In dimensioning, the following should be considered.

1. Measurement Units. Show all dimensions in english measure. Do not use dual metric and english units. Each unit symbol should be lower-cased and exponentiated, if required, in accordance with english-units customary practice. A period should follow only the symbols in. and gal.
2. Bridge Plans. Show all bridge-plans detail dimensions including span lengths, floor slab widths, etc., in feet and inches. Show all non-structure dimensions on the General Plan and Layout sheets in feet.
3. Road Plans. Road-plans sheets will be prepared using feet and decimals of a foot.

4. Traffic Plans. Traffic-plans sheets will use either feet and inches, or feet and decimals of a foot, depending upon the element shown. However, if the large majority of the dimensions of a drawing or detail are all in one unit method or the other, show all dimensions using one method.
5. Common Units. Where all or most of the units are shown in one set of dimensions (e.g., either feet or inches), a footnote may be added to the sheet stating this fact. For example, *All dimensions are in inches (in.) except as noted*. Remove the ft or ', or the in. or '' symbol from the plans to improve the sheet clarity.
6. Spacing. Provide a space between the value and abbreviation symbol (e.g., 12 ft or 12.25 ft or 6 in.). Do not provide a space between the value and punctuation symbol (e.g. 12' or 6"). Provide a hyphen between a feet-and-inches value using punctuation symbols (e.g. 12'-6").
7. Value Less Than 1. For a decimal value, place a zero before the decimal marker (e.g., 0.75 ft). For a fractional value of less than one inch in a feet-and-inches value using punctuation symbols, include a zero ahead of the fraction (e.g. 12'-0½").
8. Large Number. For a number larger than three digits, use a comma to separate blocks of three digits (e.g., 12,000 ft²). For plan dimensions, it will be satisfactory to either insert or omit the comma as desired.

14-3.04(02) Symbols and Legends

Chapter 15 will provide the Department's electronic-drafting symbol library. These symbols should be used in the preparation of manually- or electronically-drafted plans. To obtain a copy of this library, the designer should contact the CADD Support Team.

Figure [14-3A](#), Recommended Plans Legends, provides the legends that may be used on plans. Chapter 15 will describe traffic symbols and legends that should be used within a set of plans. A circle with either a letter or number inside it may be used to indicate various construction items or materials. Where additional items are similar but with different thicknesses, layers, weights, etc., use an alphanumeric combination [e.g., (A1) 14-in. Plain Cement Concrete Pavement, (A2) 10-in. Plain Cement Concrete Pavement]. The legend should be consistent throughout a set of plans (i.e., each number or letter applies to an individual item throughout a set of plans). Do not renumber

the legends on each sheet to account for the unused legends. List the legends used on a sheet in an open area on the sheet.

14-3.04(03) Text

Chapter 15 will provide the Department's criteria for text sizes, fonts, and line weights. For each sheet type, use uniform text sizes and line weights. For example, all of the text for notations in the plan view should be of the same size and weight. However, the text for the summary table may be in a different text size. The font type should be uniform throughout the plans.

Words should not be abbreviated so should therefore be completely spelled out. However, this is not always practical. Figure [14-3B](#), Plans Abbreviations, provides the common abbreviations that should be used where it is necessary to abbreviate words. Spell out the words for those terms not listed in Figure [14-3B](#).

14-3.04(04) Plan Notes

Specific plan notes (e.g., dimensions, clarifications) should be placed directly on the applicable sheet. General notes which apply to the whole project or several sheets should be placed on the Index and General Notes Sheet. The types of notes that are acceptable for placement in the plans are as follows:

1. a specific reference to a drawing on a sheet;
2. a note with an arrow drawn to a part of a drawing it complements;
3. utility owners;
4. soil-borings information;
5. cross references to other plan sheets or INDOT *Standard Drawings*;
6. hydraulic data;
7. earthwork table or balance information;
8. bridge-seat calculation procedure;
9. legends;
10. screed instructions;

11. benchmark data;
12. traffic-signal diagram description;
13. Sign Summary description notes;
14. all tables; and
15. Structure Data sheet remarks.

Notes which describe the particular work, material requirements, construction requirements, method of measurement, or basis of payment are considered to be specifications and should not be included on a set of plans. These notes should be included in the INDOT *Standard Specifications*, recurring special provisions, or unique special provisions. Chapter 19 provides guidance on the use and preparation of these specifications.

14-3.04(05) Miscellaneous

The following provides guidelines which the designer should consider in preparing a set of plans.

1. Stationing. An english-units station of 100 ft is used, which is shown to two decimal places (e.g., 1 + 00.00). Show tic marks at 100-ft intervals. The tic marks are shown on the survey left side of the centerline. Indicate a full station at every 500-ft interval with plus stations at 100-ft intervals. For an example, see *INDOT Typical Plan Sheets*.

For example, Sta. 12+27.96 indicates a point 27.96 ft forward of english-units Sta. 12+00. The location of the first even-hundred station on a new alignment is arbitrary.

2. Cross-Section Intervals. Use 50-ft cross-section intervals where the alignment is maintained over existing embankments and through rolling terrain. A larger interval may be used where uniform templates are used over flat terrain. Provide additional cross-section intervals where there are abrupt changes in either the typical section or the existing ground.
3. Angles. Express angles in degrees, minutes, and seconds.

4. North Arrow. Provide a uniform north arrow on the finished set of plans. Chapter 15 illustrates the appropriate north arrow that should be used.
5. Reduction. A full-sized set of mylar (reproducible) plans is required for construction and contract letting. Section 14-3.03 discusses the sheet sizes that are used by the Department. Scales used for drafting the full-size sheets are no longer accurate once the plans are reduced. Once the plans are reduced, readability of the plans may become critical. The minimum text sizes that should be used are provided in the *INDOT CADD System User Guide*, and Chapter 15.
6. Limits. The limits of plan coverage on a road-project plans sheet will vary according to the plan and profile scale selected and type of plans sheet selected. Section 14-3.05 discusses the scales that should be used.
7. Plans Sheets. The Department's typical plans sheets can be obtained from the INDOT CADD library.
8. Alignment Placement. Where the horizontal alignment is on tangent, the centerline or survey line should parallel the top border and be centered vertically in the plan-view space. Where the horizontal alignment is on a curve, tangents should be angled to produce reasonable balance. Keep an entire curve on the same sheet.
9. Soil Boring Logs. In plotting soil-boring logs for a bridge project, elevations should be shown along the vertical grid for each boring log so that the elevation of each soil sample can be ascertained. Road-boring logs should not be included in the plans.

Boring logs may be scanned and placed onto the Soil Borings sheet, provided such logs are legible when reduced to half-size.
10. Project Block. Each sheet will have a project block along the bottom of the sheet. The project block will vary from sheet to sheet. These are illustrated in the *INDOT Typical Plan Sheets* document. The following information, from left to right, should be included in the project block.

- a. Design Information. In the lower left-hand corner of each plan and profile sheet, include the horizontal-alignment references. For most other sheets, this area will be left blank.
- b. Engineer's Seal. The engineer's seal is required on each sheet, except cross sections, along with the signature of the engineer and date signed. The seal location may vary within the plans sheet depending on which engineer prepared the sheet.
- c. Signatures. The signature block will include the signatures for the design engineer, designer, drafter, and checkers.
- d. Sheet Title. Each sheet should be labeled.
- e. Scales. Where applicable, identify the scales used on the drawing in the lower right-hand corner.
- f. File Numbers. Show all applicable files and references including contract number, bridge file, Des number, etc., in the lower right-hand corner.
- g. Sheet Numbering. Provide the sheet number and the total number of sheets for the set in the lower right-hand corner of each sheet. Number all sheets sequentially including the title sheet. Sheets that are added after the sheet numbers have been placed should be designated as described in Section.14-1.02(05), and identified in the index. The additional sheets are not included in the total number of sheets. The sheet numbering should be the last thing the designer does prior to submitting the final tracings to the Research and Documents Library Team.
- g. Survey Lines. If there are multiple survey lines, indicate the line designation with the sheet title (e.g., Plan and Profile Line "S-1-A").

14-3.04(06) Title Sheet

The information block should be in accordance with the format shown in Figure [14-3C](#). Part V

includes geometric design tables which reflect the scope of project construction. The applicable design criteria in such tables are based not only on traffic volume characteristics, but also on road classification, rural or urban setting, type of terrain, and access control. The information block will have all of these design controls defined in one location. A person looking at the plans will immediately know which geometric design table and what design criteria were used in the project development.

In the signatures box, the words Indiana Department of Transportation should be shown under the Approved for Letting signature line, as shown in Figure [14-3C\(1\)](#). Nothing else should be shown.

14-3.05 Scales

The following provides the recommended drawing scales that should be used in developing a set of plans. The selected scales should be shown in the project block on each sheet. Where scales are not used, this should be shown in the project block.

14-3.05(01) Road Project

For a road project, use the following scales.

1. Title Sheet. For the location map, a 1" = 2000' scale should be used. A location map for an urban area may use a 1" = 1000' scale for better clarity. For a longer project, a scale of 1" = 4000' may be necessary.
2. Typical Sections. The scale for the typical-section figures, commonly ¼" = 1'-0", is at the designer's discretion. The scale selected should adequately show the necessary features. Although not desirable, the scale may vary from typical section to typical section. The vertical scale may be exaggerated to adequately show the pavement cross section.
3. Right-of-Way Sheets. The appropriate scale will depend on the plat sheet used. The following will apply.
 - a. Route Survey Plat. Use a scale of 1" = 200'.

- b. Plat No. 1. For a rural area, use a scale of 1" = 400'. For an urban area, use 1" = 100'. For a spot improvement project (e.g., small structure replacement, sight distance improvement, etc.), a scale of 1" = 200' may be used.
 - c. Plat No. 3. For a rural area, use a scale of 1" = 400'. For an urban area, use 1" = 100'. For an intermediate area, a scale of 1" = 200' may be used.
4. Plan and Profile Sheets. Plan and profile views will be shown together on one sheet, with the plan view on top and profile view on the bottom. The following scales are used.
- a. Plan View, Rural. A scale of 1" = 50' should be used. For a longer rural project, a 1" = 100' scale may be used.
 - b. Plan View, Urban. Depending upon the complexity of the location and work to be accomplished, a scale of 1" = 20' or 1" = 50' should be used.
 - a. Profile View, Horizontal. This will be the same scale as the plan view.
 - d. Profile View, Vertical. The vertical-profile scale will be 1" = 5' or 1" = 10' depending on the complexity of the project and the plan-view scale selected. A 1" = 10' scale will be used with a plan-view scale of 1" = 100'. A 1" = 5' scale will be used with a plan-view scale of 1" = 50' or 1" = 20'.
- Other scales, as necessary, may be used to provide better clarity or more practical layouts. If a detail cannot be adequately viewed in the selected scale, show the element on a Details sheet.
5. Superelevation-Transition Sheet. The selected scale is left to the designer's discretion. Select a scale which will adequately show the necessary features.

6. Details Sheet. The selected scale will vary based on the complexity of the detail and room available on the sheet. The following provides the scales that are commonly used.
- a. Construction Details. Use a plan-view scale of 1" = 20'.
 - b. Intersection or Approach Details. Use a plan-view scale of 1" = 20'.
 - c. Spot-Elevation Sheet. Use a plan-view scale of 1" = 20'.
 - d. Signing Details. The plan-view scale will be 1" = 50' for an urban area or 1" = 100' for a rural area.
 - e. Signal Details. The plan view scale will be 1" = 20'.
 - f. Pavement Markings. The preferred plan-view scale is 1" = 50'. Where significant detail is required, use a plan-view scale of 1" = 20'.
 - h. Traffic-Maintenance Details. Use a plan-view scale of 1" = 50' or 1" = 100'.

The designer may select an alternative scale for one of the above details based on the complexity of the detail and space available on the sheet. For those details not listed, the designer will determine the scale as required.

7. Cross Sections. The horizontal and vertical cross-section scales will be 1" = 10'. A larger scale may be used where a greater cross-section width or height is required.

14-3.05(02) Bridge Project

Many of the sheets for a bridge project (e.g., index and title sheet, Typical Cross Sections, Right-of Way Plat, Plan and Profile sheets, cross sections) will use the same scales as listed in Section 14-3.05(01) for a road project. The scales for the structural details will vary according to the

complexity of the drawing and space available on the sheet. The designer should select a scale which will adequately show the necessary detail and still allow the detail to be readable at a reduced scale. The scale for the Layout sheet should be 1" = 30', 1' = 40', or 1" = 50'. For a complex urban project or a project in a steep rural area, a 1" = 20' scale may be used.

14-3.05(03) Traffic Project

For a traffic-signs, signalization, or lighting project, the following scales should be used.

1. Title Sheet. For the location map, a 1" = 2000' scale should be used. The location map for an urban area may use a larger scale for better clarity. For a longer project or for a project scattered throughout a district, it may be necessary to use a scale of 1" = 5000' or smaller.
2. Plans Sheets. The selected scale will depend upon the type of project selected.
 - a. Traffic-Signs Sheets. The plan-view scale will be 1" = 50' for an urban area. For a rural area, depending on the project complexity, the scale will be 1" = 100' or 1" = 200'.
 - b. Signalization Sheets. The plan-view scale for signalization at an intersection will be 1" = 20'. Where details are required for work between intersections (e.g., interconnect details), the scale may be 1" = 100' or 1" = 50'.
 - c. Lighting Sheets. The plan-view scale will be 1" = 50' in an urban area. For a rural area, depending on the project complexity, the scale will be 1" = 100' or 1" = 200'.
3. Details Sheets. The selected scales will be determined depending on the complexity of the detail and space available on the sheet.
4. Cross Sections. Where cross sections are required, the horizontal and vertical cross-section scales will be 1" = 10'. A larger scale may be used where a greater cross-section width or height is required.

14-3.06 Plan Dimensions Accuracy

The accuracy of plan dimensions should be consistent with data upon which they are based. Accuracy for dimensions to be shown on plans is as follows.

14-3.06(01) Road or Traffic Plans

The following accuracies should be observed.

1. Stationing. Show all stationing to the nearest hundredth of a foot (i.e., 0 + 00.01). This will include PVI, PC, PI, PT, equation stations, etc.
2. Angle. An angle or bearing should be shown to the nearest second (i.e., 0° 00' 01").
3. Horizontal-Alignment Data. Figure [14-3D](#), Horizontal-Curve Data on Plans Sheets, provides the order and rounding accuracy that should be used to describe curve data.
4. Vertical-Profile Data. The following vertical-alignment accuracies should be used.
 - a. PVI. Stationing. Show each PVI at an even station.
 - b. Vertical-Curve Length. Round the length to the nearer 10 ft.
 - c. PVI Elevation. Show the elevation to the nearer 0.01 ft.
 - d. Grade. Show each vertical grade to the nearer 0.001%.
 - e. Vertical Clearance. Show each vertical clearance to the nearer 0.01 ft.

5. Elevation. The following elevation accuracies should be used.
 - a. Bench Mark. Show the elevation to the nearer 0.01 ft.
 - b. Flow-Line Elevation. Show each elevation to the nearer 0.01 ft.
 - c. Pavement Elevation. For existing pavement, show each elevation to the nearer 0.01 ft.
 - d. Ground Line. Show the existing ground line to the nearer 0.01 ft.
 - e. Other. Show all other vertical elevations, breaks in ditch grades, pipe invert elevations, etc., to the nearer 0.01 ft.
6. Contour Interval. The contour interval will be in 1-ft increments. Each fifth contour should be emphasized and identified. Intermediate contours will not be identified unless they represent a high or low contour. In rugged terrain or on a steep slope, the intermediate contour lines may be removed for clarity.
7. Topography Features. Show the location of all proposed features to the nearer 0.1 ft, or the nearer 0.01 ft where practical.
8. Typical Cross Section Elements. The following will apply.
 - a. Width. Show all typical-cross-section elements in increments of 6 in. This includes lane or shoulder widths, ditch widths, bench widths, median widths, sidewalks, etc.
 - b. Cross Slope. Show each cross slope to the nearer 0.1%, including superelevation rates.

- c. **Pavement Depth.** HMA pavement-course density should be shown to the nearer 10 lb/yd². Show all other pavement elements (e.g., concrete-pavement thickness, aggregate or subbase depth, special-subgrade-treatment depth, underdrain dimensions, etc.) to the nearer inch.
9. **Cross-Sections Elements.** Show the profile-grade elevation to the nearer 0.01 ft.
 10. **Miscellaneous Features.** For the following features, show the dimensions to nearer increment indicated as follows:
 - a. drive location to the nearer 1 ft;
 - b. culvert location to the nearer 1 ft;
 - c. guardrail to the nearer 0.1 ft
 - d. ditch-grade break to the nearer 1 ft.

14-3.06(02) Bridge Plans

In addition to the plan accuracies discussed for road plans, use the following accuracies on bridge plans.

1. **Bridge Elements.** Bridge elements should be shown in increments of 3 in. (e.g., footing length, span length, beam spacing, pier height, etc.). Where increments of 3 in. are not practical, use 2-in. or 1-in. increments.
2. **Reinforcing Bars.** Where practical, show the length of each straight bar to the nearer 3 in. For a bent bar, show the individual dimensions to the nearer ½ in. The total length of a bent bar should be rounded to the higher inch. Show spacing of reinforcing bars to the nearer 2 in.
3. **Dimensions.** Use the following accuracy.

- a. Concrete Details. These should be shown in increments of 1 in. (e.g., deck thickness, column section, wall thickness, cap dimension, footing width, pile spacing, etc.). Where increments of 1 in. are not practical, use ½-in. increments.
 - b. Camber and Deflection Details. Show these to the nearer 0.001-ft increment.
 - c. Structural Steel Details. For designations, dimensions, and properties of structural shapes, see ASTM A 6M and the AISC english-shape tables. Other dimensions on Details sheets (e.g., plate width, plate length, splice detail, hole spacing, steel-shoe-assembly size, etc.) should be dimensioned to the nearer 1/8 in. Plate thickness may be shown to the nearer 1/16-in. increment.
 - d. Precast Prestressed-Concrete Members. Show all cross-section dimensions for these elements to the nearer ¼ in.
 - e. Manufactured Items. Accuracy for detailed dimensions for these items (e.g., expansion joints, bearing devices, etc.) should be in accordance with industry standards.
 - f. Horizontal Alignment Tie-Up. Show these dimensions to the nearer 0.01 ft.
4. Elevation. Show each structure elevation, including top-of-bearing-plate elevation, to the nearer 0.01 ft, except as follows.
- a. Top-of-Pile Elevation. Where a pile is encased in a concrete cap, show the top-of-pile elevation to the nearer 0.1 ft. Where superstructure beams are attached to the piling, show the top-of-pile elevation to the nearer 0.01 ft.
 - b. Existing Structure. Show each existing-structure elevation or concrete-removal-line elevation to the nearer 0.1 ft.
 - c. Ground Elevation. Show each of these (e.g., berm, channel clearing, upper limit of wet excavation, etc.) to the nearer 0.01 ft.

5. Bridge Quantities. Chapter 17 provides the rounding criteria for bridge quantities that are also shown on bridge plans.

14-3.07 Plan Sheet Organization

To provide consistency from project to project, the plans sheets should be assembled in the sequence listed below for the applicable project type. Not all plans sets will include all sheets, and some sheets can be combined together (e.g., Details sheets). For a project type not listed below, the sequence shown for a road project should be used.

14-3.07(01) Road Project

The recommended order of plan sheets is

1. Title sheet;
2. Index and General Notes;
3. Typical Cross Sections;
4. Plat No. 1 or Plat No. 3;
5. Geometric Tie-Up sheet;
6. Traffic Maintenance Details. A sheet is not required for an official-detour route. A diagram thereof should be included in the Contract Information Book;

7. Plan and Profile;
8. Superelevation Transition Diagram
9. Details sheets, in the order as follows:
 - a. Construction Details;
 - b. Intersection Details;
 - c. Spot Elevation Details;
 - d. Channel Details;
 - e. Geometric Details;
 - f. Right-of-Way Details;
 - g. Grading Plan;
 - h. Drainage Details;
 - i. Erosion Control Details (plan view);
 - j. Retaining Wall Details; and
 - k. Wetland Mitigation Details.
10. Traffic-work details, in the order as follows:
 - a. Signs (if separate traffic signing plans are not required);
 - b. Signals;
 - c. Lighting (if separate lighting plans are not required); and
 - d. Pavement Markings.
11. Miscellaneous tables;
12. Approach Table;

13. Underdrain Table;
14. Guardrail Summary Table;
15. Structure Data Table;
16. Pipe Materials sheet; and
17. Cross sections.

14-3.07(02) Bridge Project

The recommended order of plan sheets is

1. Title sheet;
2. Index
3. Typical Cross Sections;
4. Traffic Maintenance Details. A sheet is not required for an official-detour route. A diagram thereof should be included in the Contract Information Book;
5. Road Plan and Profile;
6. Superelevation Transition Diagram;
7. Roadway Details, in the order as follows:

- a. Construction Details;
 - b. Intersection Details;
 - c. Spot Elevation Details;
 - d. Geometric Details;
 - e. Right-of-Way Details;
 - f. Grading Plan;
 - g. Drainage Details; and
 - h. Erosion Control Details (plan view);
8. Traffic-work details, in the order as follows:
- a. Signs (if separate traffic-sign plans are not required);
 - b. Signals;
 - c. Lighting (if separate lighting plans are not required); and
 - d. Pavement Markings.
9. Soil Borings;
10. Channel Change Layout;
11. Layout;
12. General Plan;
13. Structure details sheets, in the order as follows:
- a. Abutment/Bent/Pier Details and Bill of Materials;
 - b. Framing Plan and Girder Elevation;
 - c. Structural-Steel Details or Precast-Concrete Beam Details;

- d. Jacking Frames;
 - e. Bearing Details;
 - f. Floor Details;
 - g. Corner Details and Floor Bill of Materials;
 - h. Railing Details;
 - i. Expansion Joint Details; and
 - j. Screeds (optional).
-
- 14. Coping Offsets and Tie-up Dimensions;

 - 15. Reinforced Concrete Bridge Approach Details;

 - 16. Bridge Summary;

 - 17. Miscellaneous tables;

 - 18. Approach Table;

 - 19. Underdrain Table;

 - 20. Guardrail Summary Table;

 - 21. Structure Data Table;

 - 22. Pipe Materials sheet; and

 - 23. Cross sections.

14-3.07(03) Traffic Signing Project

The recommended order of plan sheets is

1. Title sheet;
2. Index and General Notes;
3. Signing Plan;
4. Sign Layout;
5. cross sections;
6. Footing Details; and
7. Structural Details.

14-3.07(04) Signalization Project

The recommended order of plan sheets is

1. Title sheet;
2. Index and General Notes;
3. Signal Plan; and
4. Signal Details.

14-3.07(05) Lighting Project

The recommended order of plan sheets is

1. Title sheet;
2. Index and General Notes;
3. Lighting Plan; and
4. Cross sections.

CONTRACT INFORMATION BOOK CERTIFICATION

(Return to INDOT in 48 hours)

INDOT contact person, _____, Project Coordinating Engineer,
Office of Estimating, Contract Administration Division

Letting Date:

Contract No.:

Route:

Des. No.:

County:

I certify that I have reviewed the plans and the Contract Information book (CIB), and have verified that they are correct as compiled, based on design submittals received by Contract Administration prior to the compilation of the CIB.

(signed) project designer

INDOT location or consulting-firm name

Date,

OR

The plans or CIB include errors. The designer is responsible for documenting the errors, and for noting which errors were caused by omissions or misinterpretations by INDOT based upon the original material, or based upon new material. The designer shall transmit the documentation to the contact person identified above.

(signed) project designer

INDOT location or consulting-firm name

Date,

SHEET	Road, Bridge, or Traffic Project Manager	Traffic Signs Team	Traffic Signals Team	Highway Lighting Team
Title	X			
Index and General Notes	X			
Typical Sections	X			
R/W Plats	X			
Geometric Tie-Up Sheet	X			
Plan and Profile	X			
Superelevation Transition	X			
Details	X			
Construction Details	X			
Intersection Details	X			
Spot Elevation Details	X			
Channel Details	X			
Geometric Details	X			
Right-of-Way Details	X			
Grading Plan	X			
Drainage Details	X			
Erosion Control Details	X			
Traffic Details				
Signs	X	X		
Signals			X	
Lighting				X
Pavement Markings	X	X		
Traffic-Maintenance Details	X	X	X	X
Soil Borings	X			
Layout	X			
Bridge Structure Details	X			
Bridge Summary	X			
Miscellaneous Tables	X	X	X	X
Approach Table	X			
Underdrain Table	X			
Structure Data Table	X			
Pipe Materials	X			
Sign Structure Table	X			
Guardrail Summary Table	X			
Cross Sections	X			

**SHEET-PREPARATION RESPONSIBILITIES
FOR ROAD, BRIDGE, OR TRAFFIC PROJECT**

Figure 14-1A

CONSTRUCTION CHANGE

Date:

Contract No.: Work Type:
Route: Des No.: Location: of
Structure No.: Project No.:

TO:

District Deputy Commissioner

ATTN.:

District Construction Office Manager

FROM:

Project Manager

Transmitted herewith are copies of the above-referenced contract's revised plans sheets, numbered . These sheets were revised on . The revision involved the following:

Please have the Project Engineer or Supervisor prepare a Change in Plans, Form IC-626, addressing revised pay quantities, if applicable.

Two sets of the revised sheets are for your files and two sets each are to be delivered to the Contractor and Project Engineer or Supervisor. The FHWA is being provided with a half-size set of the revised sheets for its files (if applicable).

Note: Quantities revisions are to be computed and transmitted by the designer with this memorandum to the Project Engineer or Supervisor for aid in preparing Form IC-626.



Proposal ID: B-39002-A
Project ID: 1592467

Proposal Description: BRIDGE THIN DECK OVERLAY
Federal Project Number: 159246700ST5 State Project Number:

Project Description: BRIDGE THIN DECK OVERLAY

Line #	Ref. ID	Description	Alt. Set	Alt. Member	Units	Qty.	Price	Ext. Amount	Fund Package ID	Flags*
0014	401-11785	LIQUID ASPHALT SEALANT			LFT	1,800.000	2.00000	3,600.00	Federal/State 80-20	L
0015	406-05520	ASPHALT FOR TACK COAT			TON	1.000	1,200.00000	1,200.00	Federal/State 80-20	L
0016	507-08272	JOINTS IN PCCP, SAW AND SEAL			LFT	88.000	2.21000	194.48	Federal/State 80-20	L
0017	602-06729	BARRIER, DELINEATOR			EACH	14.000	30.87000	432.18	Federal/State 80-20	L
0018	628-09403	FIELD OFFICE, C			MOS	16.0	1,486.50000	24,484.04	Federal/State 80-20	L
0019	628-11976	COMPUTER SYSTEM EQUIPMENT			EACH	2.000	600.00000	1,200.00	Federal/State 80-20	L
0020	709-51821	SURFACE SEAL , BRIDGE NO. 135-88-07868			LS	1.000	24,025.78000	24,025.78	Federal/State 80-20	L B
0021	722-51852	BRIDGE DECK PATCHING, PARTIAL DEPTH			SFT	143.000	43.72000	6,251.96	Federal/State 80-20	L
0022	738-09456	POLYMERIC CONCRETE BRIDGE DECK OVERLAY			SYS	833.000	42.46000	35,369.18	Federal/State 80-20	L
0023	801-04308	ROAD CLOSURE SIGN ASSEMBLY			EACH	6.000	287.88000	1,727.28	Federal/State 80-20	L
0024	801-06207	TEMPORARY PAVEMENT MARKING, REMOVABLE, 4 IN.			LFT	450.000	1.14000	513.00	Federal/State 80-20	L
0025	801-06625	DETOUR ROUTE MARKER ASSEMBLY			EACH	34.000	111.36000	3,786.24	Federal/State 80-20	L
0026	801-06640	CONSTRUCTION SIGN, A			EACH	30.000	160.52000	4,815.60	Federal/State 80-20	L
0027	801-06775	MAINTAINING TRAFFIC			LS	1.000	20,000.00000	20,000.00	Federal/State 80-20	L B
0028	801-07118	BARRICADE, III-A			LFT	180.000	14.42000	2,595.60	Federal/State 80-20	L
	406-05521	ASPHALT FOR TACK COAT			SYS	4,000	\$0.25	\$1,000.00		

Notes:

1. All deletions are struck through.
2. All additions or corrections are marked in highlighted text.
3. Submitted in .pdf format from Detail Cost Estimate.

EXAMPLE DETAIL COST ESTIMATE PREPRINT CORRECTION

Figure 14-1H

(new Sep. 2020)

Recurring Special Provisions and
 Recurring Plan Details
 Menu and Basis for Use
 For Use with the 2020 Standard Specifications
 Effective September 1, 2019

[rev. 4/30/2020]
 (correct. 5/19/2020: removed 306-B-6864, 609-B-310d - incorporated into St. Draw series)
Effective for lettings on or after September 1, 2020
 (to be used with 2020 Standard Specifications)

Contract R-XXXX
 District Greenfield

NOTE: This Menu is divided into two sections:
SECTION I - Standard Recurring Special Provisions and Recurring Plan Details
 and

SECTION II - Contract Specific Recurring Special Provisions.

Please review both sections to locate and ensure the correct items are placed in the contract.

Place In Contract (X)	Attach. Req'd. (X)	RSP Number	Title	A or R	Adopted or Revised Date	Letting Effective Date	Basis for Use
SECTION I: Standard Recurring Special Provisions and Recurring Plan Details							
X		100-C-146	Payment of Predetermined Minimum Wage Determination (Davis-Bacon Act) IN ___0001	R	02-03-17	02-03-17	Required for all contracts in Lake, LaPorte, Porter and St. Joseph counties except building construction. Do not use for maintenance contracts such as: mowing, herbicide, sweeping, light bulb replacement or tree removal/trimming.
		100-C-146	Payment of Predetermined Minimum Wage Determination (Davis-Bacon Act) IN ___0006				Required for all contracts in counties other than Lake, LaPorte, Porter and St. Joseph counties except building construction. Do not use for maintenance contracts such as: mowing, herbicide, sweeping, light bulb replacement or tree removal/trimming.
X		100-C-151A	FHWA-1273	R	05-01-12	09-01-13	Required for all federal aid contracts.
X		100-C-151D	Executive Order 11246	R	05-02-19	09-01-19	Required for all federal aid contracts.
X		100-C-151E	Title VI Assurances	R	05-21-15	08-01-15	Required for all contracts.
		100-C-166	As-Built Traffic Signal Plans	R	08-15-07	09-01-13	Required for all contracts with Permanent Traffic Signal installations.

Notes:

1. All incorrect information is struck through in red.
2. All corrections are shown in highlighted text.
3. Desired corrections are submitted in .pdf format.

EXAMPLE SPECIAL PROVISIONS MENU CORRECTION

Figure 14-1I

(new Sep. 2020)

102-C-082 SCHEDULE OF PAY ITEMS FOR OPTION BIDS

(Revised 07-19-18)

The Standard Specifications are revised as follows:

SECTION 102, AFTER LINE 12, INSERT AS FOLLOWS:

The Schedule of Pay Items is set up in three sections.

Section 0001, or Common Biddable Items, is the list of all pay items which are common to Section 0002 and Section 0003.

*Section 0002, or Option Group OP1, is the list of all pay items required to perform the construction of a Latex Modified Concrete **Bridge Deck Overlay** in accordance with the details shown on the plans for Str. No. I123-45-67890A.*

*Section 0003, or Option Group OP2, is the list of all pay items required to perform the construction of a ~~Micosilica~~ **Silica Fume Modified Concrete** **Bridge Deck Overlay** in accordance with the details shown on the plans for Str. No. I123- 45-67890A.*

The bidder shall completely fill in and submit Section 0001 and Section 0002, or Section 0001 and Section 0003 of the Schedule of Pay Items. The Schedule of Pay Items thus submitted will be the one which will be compared to the Schedule of Pay Items submitted by all other bidders.

When not bidding either Section 0002 or 0003, the bidder shall leave blank each line of the section not bid.

The work shall be constructed in accordance with the Schedule of Pay Items sections upon which award of the contract was based.

Notes:

1. All deletions are turned to red text and struck through.
2. All additions are formatted with highlighted text.
3. Track Changes is not used.
4. Submitted in Word document.

**EXAMPLE SPECIAL PROVISION PREPRINT WITH TEXT
CORRECTION**

Figure 14-1J

(new Sep. 2020)

~~108-C-094 FAILURE TO COMPLETE ON TIME FOR INTERMEDIATE COMPLETION DATE~~

~~(Revised 05-02-19)~~

~~The Standard Specifications are revised as follows:~~

~~SECTION 108, AFTER LINE 590, INSERT AS FOLLOWS:~~

~~—————The work specified shall be arranged and prosecuted such that the Bridge No. 3 pay items and appurtenances specified shall be completed and opened to traffic on or before the intermediate completion date shown on the Proposal sheet.~~

~~—————If the Bridge No. 3 pay items and appurtenances are not completed and all required lanes are not opened to traffic on or before the intermediate completion date shown on the Proposal sheet, \$1500 will be assessed as liquidated damages, not as a penalty, but as damages sustained for each calendar day that lanes required to be open remain closed to traffic after such intermediate completion date.~~

~~—————An extension to the intermediate completion date, as set out above, may be granted if the award of the contract is not made within 30 days of the date of the letting and if the delay in award is not due to the failure of the Contractor to provide necessary information or documents.~~

Notes:

1. Submitted in Word document format amended from original file.
2. Deletion turned to red text and struck through instead of resubmitting Word document with specification removed.
3. Track Changes are not used.

**EXAMPLE SPECIAL PROVISION PREPRINT FOR COMPLETE
REMOVAL**

Figure 14-1K

(New Sep. 2020, Rev. **Jun. 2021**)



**Indiana Department of Transportation
Proposal**

Date of Letting: August 05, 2020
Time of Letting: 10:00 AM

Location of Letting: N725 CONF RM, GOVERNMENT CENTER NORTH
100 N. SENATE AVENUE
INDIANAPOLIS, INDIANA 46204

State Certified

Contract Number: R -42652-B Districts: Crawfordsville

Counties: BOONE

Description: CONCRETE PAVEMENT RESTORATION AND BRIDGE THIN
DECK OVERLAY

Location: ON I-85 AT VARIOUS LOCATIONS

Project Control No.	Federal/State No.	Location
1800403	180040300ST1	BRIDGE THIN DECK OVERLAY I85-140-10081 CONTINUOUS PRESTRESSED CONCRETE BOX BEAMS BOONE COUNTY - ON I-85S OVER PRAIRIE CREEK TRAIL, 0.55 MILE NORTH OF SR 32 (RP 140+0067)
1800412	180041200ST1	BRIDGE THIN DECK OVERLAY I85-140-10082 CONTINUOUS PRESTRESSED CONCRETE BOX BEAMS BOONE COUNTY - ON I-85N OVER PRAIRIE CREEK TRAIL, 0.55 MILE NORTH OF SR 32 (RP 140+0067)
1900646	190064600ST1	CONCRETE PAVEMENT RESTORATION BOONE COUNTY - ON I-85 FROM 1.66 MILES S OF SR 39 TO 1.07 MILES S OF US 52 (RP 137+0019 TO 141+0005)

Time ID	Description	Completion Date or Number of Units	Time Type	Liquidated Damages	Rate
00	COMPLETION DATE	8/15/2021	DT	\$2,000.00 per Day	\$1,500 per Day
01	INTERMEDIATE COMPLETION DATE #1	11/15/2020	DT	\$1,000.00	per Day
02	INTERMEDIATE COMPLETION DATE #2	3/30/2021		\$1,500.00	per Day
03	INTERMEDIATE COMPLETION DATE #3	7/30/2021	DT	\$1,500.00	per Day

(*) - Indicates Cost Plus Time Site. See Schedule of Items for Cost Per Unit

DBE GOAL: A contract provision goal of 12.00 percent of the contract bid price has been established as the minimum amount for contracting to disadvantaged business enterprises.

Stormwater Quality Manager: Erosion Control Level One

Pre-Bid Meeting Date: Not Applicable

THE FOLLOWING DOCUMENTS ARE INCLUDED IN THE CONTRACT:
2020 STANDARD SPECIFICATIONS EFFECTIVE
LIST OF APPROVED OR PREQUALIFIED MATERIALS
STANDARD DRAWINGS LISTED ON STANDARD DRAWING INDEX EFFECTIVE 9-1-19
PRE-BID QUESTIONS AND ANSWERS AVAILABLE ON THE INDOT WEBSITE

Notes:

1. All incorrect information is struck through in red.
2. All corrections are shown in highlighted text.
3. Individual CIB sheets requiring correction are submitted in .pdf format.

EXAMPLE CIB PREPRINT CORRECTION

Figure 14-1M

(new Sep. 2020)



Proposal ID: R-42852-B

Project(s): 1800403, 1800412, 1900648

SECTION: 1 CONCRETE PAVEMENT RESTORATION AND BRIDGE THIN DECK OVERLAY

Alt Set ID: Alt Mbr ID:

Proposal Line Number	Item ID Description	Approximate Quantity and Units	Unit Price	Bid Amount
0025	402-10087 402-10087 HMA FOR TEMPORARY PAVEMENT, C	357.000 TON		
	HMA FOR TEMPORARY PAVEMENT, B			
0026	406-05520 ASPHALT FOR TACK COAT	10.000 TON		
0027	408-12028 CRACKS IN ASPHALT PAVEMENT, FILL	3.000 TON		
0028	503-03489 RETROFITTED TIE BARS	482.000 EACH		
0029	503-05240 D-1 CONTRACTION JOINT	380.000 LFT		
0030	503-12480 TERMINAL JOINT, RETROFIT POLYMER MODIFIED ASPHALT	478.000 SFT		
0031	506-08333 PCCP PATCHING, FULL DEPTH	694.000 SYS		
0032	506-08334 PCCP PATCHING, PARTIAL DEPTH	106.000 SYS		
0033	507-08272 JOINTS IN PCCP, SAW AND SEAL	474,500.000 175,400 LFT		
0034	507-12099 PCCP GROOVING	17,675.000 SYS		
0035	507-12191 JOINT REPAIR, PARTIAL DEPTH	1,000.000 SFT		
6000	607-12162 JOINT REPAIR, BOTTOM HALF	60.000 SFT		
0037	605-05523 CURB, HMA	41.000 LFT		

Notes:

1. All incorrect information is struck through in red.
2. All corrections are shown in highlighted text.
3. Individual CIB sheets requiring correction are submitted in .pdf format.

**EXAMPLE CIB SCHEDULE OF PAY ITEMS CORRECTION
(REVISION ONLY)**

Figure 14-1N

(new Sep. 2020)

DATE: 14JUN04. TIME: 08:58:37

MOSS

REPO SECTIONS

DESIGN

MODELNAME	RECORD	SECURITY	LAST UPDATED
Sections	195	Free	14 Jun 04, 08:11:52
Design	194	Free	14 Jun 04, 08:37:04

LABEL	SUBREF	CONTENTS	NO. PTS.	X-MIN	Y-MIN	X-MAX	Y-MAX
G001	MBRA	7705	24	4843	4801	4936	4874

CHAINAGE 2100.000

Point	---X---	---Y---	---Z---	OFFSET	LABEL CUT
1	4843.480	4873.250	783.566	-58.220	BNDR
2	4843.597	4873.159	783.578	-58.072	TRIA
3	4849.094	4868.863	783.709	-51.096	BNDR
4	4857.378	4862.390	783.784	-40.582	*TR*
5	4865.662	4855.916	783.858	-30.068	BNDR
6	4870.090	4852.456	783.252	-24.449	DLL1
7	4870.323	4852.274	783.292	-24.153	TRIA
8	4870.603	4852.055	783.322	-23.798	TRIA
9	4873.658	4849.668	783.634	-19.921	TRIA
10	4878.029	4846.253	784.052	-14.374	ESL1
11	4881.321	4843.680	784.194	-10.196	TRIA
12	4881.836	4843.277	784.211	-9.542	TRIA
13	4881.930	4843.204	784.214	-9.423	EPL1
14	4890.246	4836.705	783.901	1.131	TRIA
15	4890.299	4836.664	783.899	1.199	RC01
16	4890.359	4836.617	783.895	1.274	TRIA
17	4899.115	4829.774	783.278	12.387	EPR1
18	4900.460	4828.724	783.283	14.093	TRIA
19	4902.977	4826.756	783.239	17.288	ESR1
20	4904.728	4825.389	782.875	19.510	BNDR
21	4913.940	4818.190	782.961	31.202	BNDR
22	4919.066	4814.184	784.485	37.707	TRIA
23	4933.653	4802.785	784.324	56.219	TRIA
24	4935.277	4801.516	784.460	58.281	BNDR

LABEL	SUBREF	CONTENTS	NO. PTS.	X-MIN	Y-MIN	X-MAX	Y-MAX
G002	MBRA	7705	21	4854	4814	4958	4898

CHAINAGE 2125.000

Point	---X---	---Y---	---Z---	OFFSET	LABEL CUT
1	4854.682	4897.293	782.607	-64.367	BNDR

**EXISTING ELEVATIONS FROM
ELECTRONIC CROSS SECTIONS DATA**

Figure 14-2A

UNDERGROUND STORAGE TANKS REMOVAL

, 20

MEMORANDUM

TO:

Environmental Services Office Administrator
Production Management Division

THRU:

- Roadway Services Manager, Production Management Division
- Structural Services Manager, Production Management Division
- District Design Manager

FROM:

Project Manager

SUBJECT: Underground Storage Tanks Removal

Route: Des. No.:
 Project No.: : PE County:
 Description and Location:

Transmitted herewith is one set of plans for the above-referenced project.

This project has underground storage tanks to be removed at the locations as follows:

Station:	Offset:	left	right
Station:	Offset:	left	right
Station:	Offset:	left	right

Please provide the list of pay items and required special provisions. Also provide us with additional details that may be needed to accomplish the task.

If you need further information, please contact me at or e-mail.

Attachments/Enclosures


- 1.
- 2.

:

cc:

- (A) (thickness) in. Plain PCCP
- (A1) (thickness) in. Plain PCCP
- (C) (thickness) in. PCCP for Driveways
- (D) lb/yd² HMA for Approaches (type) on mm
 Compacted Aggregate Base (type) , (size)
- (D1) lb/yd² HMA Surface (type) on
 lb/yd² HMA Base (type) on
 mm Compacted Aggregate Base (type) , (size)
- (D2) lb/yd² HMA Surface (type) on
 lb/yd² HMA Base (type)
- (F) Concrete Sidewalk
- (J) lb/yd² HMA Shoulder
- (J1) (thickness) in. Plain PCCP Shoulder
- (J2) in. Compacted Aggregate for Shoulder
- (K) Full Depth HMA Pavement
- (K1) Breakdown of Quantities, e.g., lb/yd² HMA Surface on
 lb/yd² HMA Intermediate on
 lb/yd² HMA Base on
 in. Compacted Aggregate Base (type)
- (N) in. Compacted Aggregate for Surface (size)
- (O) in. Compacted Aggregate Base (type) , (size)
- (P) Prime Coat
- (P1) Seal Coat
- (P2) Tack Coat
- (R) lb/yd² HMA OverlayTack Coat
- (R1) lb/yd² HMA Surface on
 lb/yd² HMA Intermediate on
 lb/yd² HMA Base
- (R4) (thickness) in. PCCP for Resurface
- (U) (size) Underdrain
- (X) Construction Sign, Type A


- (X1) Construction Sign, Type B
- (X2) Construction Sign, Type _____
- (Y) Barricade, Type _____
- (Y1) Barricade, Type _____
- (1) 33 in. Concrete Barrier
- (2) 45 in. Concrete Barrier
- (2A) Modified Concrete Barrier
- (3) Longitudinal Joint
- (5) Butt Joint
- (6) Construction Joint
- (7) Keyway Joint
- (8) 1 in. Expansion Joint with Load Transfer
- (9) (width) in. Preformed Joint Filler
- (12) Impact Attenuator, Type _____
- (13) Concrete Curb
- (14) Integral Concrete Curb
- (15) Concrete Curb and Gutter
- (16) Concrete Curb Type B
- (18) Integral Concrete Curb and Gutter, Type _____
- (20) Contraction Joint, Type _____
- (21) Longitudinal Construction Joint
- (22) Concrete Center Curb, Type _____
- (23) Asphalt Curb
- (24) Ear Construction, Type A
- (25) Ear Construction, Type B
- (26) Sodding

- (27) Cement Concrete Header, Type _____
- (28) Retrofitted Tie Bar
- (31) Temporary Concrete Barrier
- (32) Impact Attenuator, CZ, Type _____
- (33) Snowplowable Raised Pavement Marker
- (34) (width) in. Solid White Paint Line
- (35) (width) in. Solid Yellow Paint Line
-  Concrete Curb Ramp
(Type is indicated by letter inside hexagon)
- (36) (message) Preformed Plastic Pavement Message Marking
- (37) (message) Thermoplastic Pavement Message Marking
- (38) (width) in. (type) (color) Thermoplastic Transverse Marking
- (39) (width) in. (type) (color) Preformed Plastic Transverse Marking
- (40) (width) in. Solid White Preformed Plastic Line
- (41) (width) in. Solid Yellow Preformed Plastic Line
- (42) (width) in. Broken White Preformed Plastic Line
- (43) (width) in. Broken Yellow Preformed Plastic Line
- (44) 24 in. Solid White Preformed Plastic Line
- (45) 24 in. White Stop Line, Preformed Plastic
- (46) (width) in. Solid White Thermoplastic Line
- (47) (width) in. Solid Yellow Thermoplastic Line
- (48) (width) in. Broken White Thermoplastic Line
- (49) (width) in. Broken Yellow Thermoplastic Line
- (50) No Change Required to Existing Sign and Supports
- (51) Remove Existing Panel Sign from Ground Mounted Supports
- (52) Remove Existing Sheet Sign from Supports
- (53) Remove Existing Panel Sign from Overhead Sign Structure

- (54) Remove Existing Sheet Sign from Overhead Sign Structure
- (55) Remove Existing Sign Foundation
- (56) Remove Existing Sheet Sign and Supports
- (57) Remove Existing Ground Mounted Panel Sign, Supports and Foundations
- (58) Remove Existing Overhead Sign, Supports and Foundations
- (59) Existing Sheet Sign on New Supports
- (60) Existing Panel Sign on New Supports
- (61) Existing Panel Sign on New Overhead Structure

RECOMMENDED PLANS LEGENDS

Figure 14-3A

&	And	℄	Baseline (ST_BOUNDLINE in
@	At		IN_Symbols.cel)
Δ	Delta or Deflection Angle	Bldg.	Building
=	Equals	Blk	Block
	Fish	Blktp.	Blacktop
	Parallel	Bldv.	Boulevard
%	Percent	Bm.	Beam
⊥	Perpendicular	B.M.	Bench Mark
∅	Phase or Diameter	Bndry.	Boundary
⌞	Begin L.A. R/W	Bot.	Bottom
⌟	End L.A. R/W	Br.	Bridge
A.A.D.T.	Annual Average Daily Traffic	Brg.	Bearing
AASHTO	American Association of State Highway and Transportation Officials	Brk.	Brick
Ab.	Abrupt	Br. S.	Bridge Seat
Abut.	Abutment	B.S.	Backsight
Ac	Acres	B. Spk.	Boat Spike
A.C.	Aluminum Cap/Asphalt Cement	B.S.T.	Bituminous Surface Treatment
A.C.L.	Access Control Line	Bur.	Buried
Add. Exc.	Additional Excavation	Calc.	Calculated
Adj.	Adjusted	C.A.P.	Corrugated Aluminum Pipe
Aggr.	Aggregate	C.A.T.	Crash Cushion/Attenuating Terminal Guard Rail End Treatment
Ah.	Ahead	Cb.	Curb
Alum.	Aluminum	C.B.	Catch Basin
A.P.	Anchor Plate	Cb.In.	Curb Inlet
App. Exist. R/W	Apparent Existing Right-of-Way	Cb.L.	Curb Line
App. P. L.	Apparent Property Line	C.B.W.	Concrete Block Wall
Appl.	Application	C.C.	Corn Crib
Appr.	Approach	C-C	Center to Center
Approx.	Approximate	Cdtn.	Condition
Art.	Article	Cem.	Cemetery
Asph.	Asphalt	C.G.M.P.	Corrugated Galvanized Metal Pipe
ASTM	American Society for Testing Materials	Ch.	Channel or Chain
Ave.	Avenue	Chan. Chg.	Channel Change
Avg.	Average	Chd.	Chord
AWG	America Wire Gauge	C.I.	Cast Iron
Az.	Azimuth	C.I.P.	Cast Iron Pipe
B.	Barn	Cir.	Circle
B.E.	Bridge End	℄	Centerline (ST_CENTERLINE in IN_Symbols.cel)
Beg.	Begin	Cl.	Class or Clearance
B.I.P.	Boiler Iron Pipe	Clr.	Clear
Bit.	Bituminous or Bitumen	C.L.	Corporation or City Limits
Bk.	Back or Bank	C.L.T.F.	Chain Link Type Fence
		C.M.B.	Concrete Median Barrier
		C.M.P.	Corrugated Metal Pipe
		Co.	County or Company

PLANS ABBREVIATIONS

Figure 14-3B (1 of 5)

C.O.	Clean Out	E.M.	Edge of Metal (surface)
Col.	Column	Emb.	Embankment
Comp.	Compacted or Composite	E.P.	Edge of Pavement
Conc.	Concrete	Eq.	Equation
Conc. P.	Concrete Pipe	Esmt.	Easement
Conn.	Connection	E.T.L.	Edge of Traveled Lane
Const.	Construction or Construct	E.T.W.	Edge of Traveled Way
Cont.	Continuous	Exc.	Excavation
Cor.	Corner	Exist.	Existing
Corr.	Corrugated	Exp.	Expansion
Cov.	Cover	Ext.	Extension
C.P.	Catch Point	Fa.	Face
Cr.	Crushed or Creek	F.A.	Federal Aid
Crs.	Course	F.B.C.P.C.S.	Fully Bituminous Coated Perforated Corrugated Steel
C. Stn.	Crushed Stone		
Ct.	Court	F.Div.	Field Division
Ctr.	Center	Fdn.	Foundation
Cu.	Cubic	Fe.	Fence
Cul.	Culvert	Fert.	Fertilizer
Cyd	Cubic Yards	F-F	Face to Face
C.Z.	Clear Zone or Construction Zone	F.F.	Front Face
D	Distribution of Traffic	F.F.T.F.	Farm Field Type Fence
Dbl.	Double	F. Hyd.	Fire Hydrant
Defl.	Deflection	Fig.	Figure
Desc.	Description	Fin.	Finish
Dest.	Destroyed	Fix.	Fixed
Det.	Detour or Detail	Fl.	Flush
Detc.	Detector	FL	Flow Line (ST_FLOWLINE in IN_Symbols.cel)
D.H.	Drill Hole		
D.H.V.	Design Hourly Volume	Flg.	Flange
Dia.	Diameter	F.O.	Fiber Optic
Diaph.	Diaphragm	F.P.	Fence Post
Dim.	Dimension	F.R.	Frontage Road
Dist.	Distance or District	F.S.	Far Side or Foot of Slope
Dn.	Down	F.T.	Farm Tile
Dp.	Deep	ft	Feet
D.S.	Downstream	Ftg.	Footing
Dr.	Drain or Drive	Fut.	Future
Dt.	Ditch	Fwy.	Freeway
Drwg.	Drawing	G.	Garage
E	East	Galv.	Galvanized
Ea.	Each	G.B.A.	Gravel Barrel Array Impact Attenuator
E.B.	Eastbound		
E.B. L.	Eastbound Lane	G.B.E.S._ _	Grated Box End Section (Pipes)
E.F.	Each Face	Gdr.	Girder
E.G.	Edge of Gutter	Geod.	Geodetic
Elec.	Electric	G.L.	Gas Line
El. or Elev.	Elevation	G.P.	Guy Pole



PLANS ABBREVIATIONS

Figure 14-3B (2 of 5)

G.P.S.	Global Positioning System	L.A.R/W.	Limited Access Right of Way
G.R.	Guard Rail	Lb	Pounds
Grav.	Gravel	L.C.	Long Chord
G.R.E.A.T. ___	GREAT Unit (Bays)	L _c	Length of Circular Curve
G.R.E.T.	Guard Rail End Treatment	L.D.	Loop Detector
G.R.T.	Guardrail Transition	Leng.	Length or Lengthen
Grnd.	Ground	Ln.	Lane
Gr.Sep.	Grade Separation	LRFD	Load Resistance Factor Design
G.S.	Gravel Surfacing	L.S.	Land Surveyor
G.S.P.	Galvanized Steel Pipe	L.S.R.	Local Service Road
Gut.	Gutter	Lt.	Left
G.V.	Gas Valve	Lt. P.	Light Pole
H.H.	Hand Hole	L.W.	Low Water
Hdw.	Headwall	Mac.	Macadam
H.I.	Height of Instrument	Matl.	Material
H.	House	Max.	Maximum
Horiz.	Horizontal	Mbox.	Mailbox
H.P.S.V.	High Pressure Sodium Vapor	Mdwl.	Mudwall
H.S.	High Strength	Meas.	Measured
Ht.	Height	Med.	Median
H.W.	High Water	Mh.	Manhole
H.W.L.	High Water Line	Mi	Miles
Hwy.	Highway	Min.	Minimum, Mineral or Minute
I	Interstate	Misc.	Miscellaneous
I.C.	Incidental Construction	Mkr.	Marker
I.D.	Inside Diameter	ML.	Mainline
I.F.	Inside Face	Mncpl.	Municipal
IMSA	International Municipal Signal Association	M.O.	Mid Ordinate
in.	Inches	Mom.	Moment
In to In	Inside to Inside	Mon.	Monument
Inc.	Incorporated	M.P.C.	Mid-Point of Curve
Incl.	Included	N	North
Inlt.	Inlet	N.B.	Northbound
Instr.	Instrument	N.B.L.	Northbound Lane
Inters.	Intersection	N.C.	Normal Crown
Intch.	Interchange	N.E.	Northeast
Inv.	Invert	Neg.	Negative
I.P.	Iron Pipe	NEMA	National Electrical Manufacturers Association
I.P.B.	Iron Pipe Buried Below Plow Depth	N.E.P.L.	No Evidence of Property Line
I.P.F.	Iron Pin Flush	N.F.	Near Face
I.P.L.	Iron Pin Lightly Buried	N.G.	Natural Gas
I.P.N.F.	Iron Pin Not Found	N.G.S.	National Geodetic Survey
Jct.	Junction	Nl.	Nail
Jt.	Joint	Nly.	Northerly
L	Length of Curve, Liter or Loop	No. or #	Number
L.A.	Limited Access	N.S.	Near Side
		N.W.	Northwest

PLANS ABBREVIATIONS

Figure 14-3B (3 of 5)

O.C.	On Centers or Overhead Crossing	P.V.I.	Point of Vertical Intersection
O.D.	Outside Diameter	Pvm't.	Pavement
O.F.	Outside Face	P.V.T.	Point of Vertical Tangent
Off.	Offset	Pwp.	Powerpole
Oh.	Overhang or Overhead	Pwr.	Power (Lines)
O-O	Out to Out	Q	Peak Discharge (Water)
O.P.O.C.	Offset Point on Curve	R.	Range or River
O.P.O.S.T.	Offset Point of Semi-Tangent	Rad. or R.	Radius
O.P.O.T.	Offset Point on Tangent	R.C.	Rapid Curing, Reinforced Concrete or Remove Crown
Out.	Outlet	R.C.P.	Reinforced Concrete Pipe
Oz	Ounces	Rd.	Road
P	Power Cable or Pipe	Rdl.	Radial
P. or Pg.	Page	Rd. N.	Road Nail
P.B.	Pull Box	Rd NF.	Road Nail Flush
P.C.	Point of Curve (Beginning of Curve)	Rd NL.	Road Nail Lightly Buried
P.C.C.	Point of Compound Curve or Portland Cement Concrete	Rdwy.	Roadway
Ped.	Pedestrian	Rec.	Record or Recommended
Pen.	Penetration	Ref.	Reference
Perf.	Perforated	Reinf.	Reinforcement, Reinforcing, Reinforced
P.G.	Profile Grade	Req'd.	Required
P.I.	Point of Intersection	Ret.	Retaining
	Plate (ST_PROPLINE in IN_Symbols.cel)	Rev.	Revised
	Property Line (ST_PROPLINE in IN_Symbols.cel)	R.M.	Reference Monument
Plas.	Plastic	R.P.	Reference Point
P.M.P.	Perforated Metal Pipe	R.P.M.	Raised Pavement Marker
P.O.C.	Point on Curve	R.R.	Railroad
Pos.	Positive	R.R. Spk.	Railroad Spike
P.O.S.T.	Point on Semi-Tangent	Rt.	Right or Route
P.O.T.	Point on Tangent	Rte.	Route
P.O.V.C.	Point on Vertical Curve	R/W	Right-of-Way
Pp.	Pages	R/W Mkr.	Right-of-Way Marker
P.P.B.	Pedestrian Push Button	Rwy.	Railway
P.R.C.	Point of Reverse Curve	S	South
Prest.	Prestressed	S.	Shed
Priv.	Private	San.	Sanitary Sewer
Proc.	Processing	S.B.	Southbound
Proj.	Project or Projected	S.B.L.	Southbound Lane
Prot.	Protect, Protector or Protection	Sched.	Schedule
P.S.D.	Paved Side Ditch	Sdwk.	Sidewalk
Pt.	Point	S.E.	Southeast
P.T.	Point of Tangent (End of Curve)	SE	Superelevation
Pub.	Public	Sec.	Section or Second
Pv.C.	Polyvinyl Chloride	Sec. Line	Section Line
P.V.C.	Point of Vertical Curve	Ser. Rd.	Service Road
		S.G.	Subgrade
		Sht.	Sheet

PLANS ABBREVIATIONS

Figure 14-3B (4 of 5)

Shldr.	Shoulder	T.O.	Top of Opening
Sig.	Signal	T.O.B.	Top of Bank
S.L.D.	Sea Level Datum	T.O.P.	Top of Pipe
Sly.	Southerly	T.O.S.	Top of Slope
Spa.	Spaces, Spacing	Topog.	Topographic
Spec. Prov.	Special Provision	T.P.	Turning Point
Spk.	Spike	Trans.	Transmission Line or Transition
Spl.	Special or Splice	Trav.	Traverse
Sq.	Square	T.T.	Transmission Tower
Sft	Square Feet	Twp.	Township (as Center Township)
Sq. in.	Square Inches	T.W.L.T.L.	Two-Way Left-Turn Lane
S.R.	State Road or State Route	Typ.	Typical
S.S.	Stainless Steel	U.	Unit
St.	Street	Ug.	Underground
Sta.	Station	Uncl.	Unclassified
Std.	Standard	U'pass.	Underpass
Std. Spec.	Standard Specifications	U.S.	Upstream
Stiff.	Stiffener	U.S.C. & G.S.	U.S. Coast & Geodetic Survey
Stk.	Staked or Stake	U.S.Co.E.	U.S. Corps of Engineers
Stl.	Steel	U.S.F.S.	U.S. Forest Service
Str.	Structure, Structural	U.S.G.S.	U.S. Geological Survey
Subd.	Subdivision	U.S.P.L.S.	U.S. Public Land Survey
Subgr.	Subgrade	V	Design Speed or Velocity
Substr.	Substructure	V.C.	Vertical Curve
Supstr.	Superstructure	Veh.	Vehicle, Vehicular
Surf.	Surface or Surfacing	Vert.	Vertical
Surv.	Survey	W	West, Wide Flange Beam or Water
S.W.	Southwest or Sidewalk	W/	With
Sym.	Symmetrical	W.B.	Westbound
T.	Tangent Length or Township (as T-6-N)	W.B.L.	Westbound Lane
T	Ton	Wd.	Wood
Tan.	Tangent	W.L.	Water Line
T.B.	Test Boring	Wly.	Westerly
T.B.M.	Temporary Bench Mark	W.P.	Working Point
Tbr.	Timber	Wt.	Weight
Tel.	Telephone	W.T.	Water Table
Tel.C.	Telephone Cable	W.V.	Water Valve
Tgp.	Telegraph Pole	W.W.	Wing Wall or Woven Wire
Tfp.	Telephone Pole	Xing.	Crossing
Temp.	Temperature or Temporary	Xsec.	Cross Section

PLANS ABBREVIATIONS

Figure 14-3B (5 of 5)

TRAFFIC DATA	
A.A.D.T. (20___) ①	V.P.D.
A.A.D.T. (20___) ②	V.P.D.
D.H.V. (20 ___) ②	V.P.H.
DIRECTIONAL DISTRIBUTION ③	%
TRUCKS ④	% A.A.D.T
	% D.H.V.
DESIGN DATA	
DESIGN SPEED	mi/h
PROJECT DESIGN CRITERIA	⑤
FUNCTIONAL CLASSIFICATION	⑥
RURAL / URBAN	(7)
TERRAIN	(8)
ACCESS CONTROL	(9)

① Current year and count

② Design year and count

③ Current-year figure

④ Design-year figures

⑤ is ONE of the following:

NEW CONSTRUCTION (FREEWAY)
 NEW CONSTRUCTION (NON-FREEWAY)
 COMPLETE RECONSTRUCTION (FREEWAY)
 PARTIAL RECONSTRUCTION (4R) (FREEWAY)
 RECONSTRUCTION (NON-FREEWAY)
 3R (FREEWAY)
 3R (NON-FREEWAY)
 PARTIAL 3R (NON-FREEWAY)

⑥ is ONE of the following:

PRINCIPAL ARTERIAL
 MINOR ARTERIAL
 STATE COLLECTOR
 LOCAL AGENCY COLLECTOR
 LOCAL ROAD
 LOCAL STREET
 RECREATIONAL ROAD

(7) is ONE of the following:

RURAL
URBAN (SUBURBAN)
URBAN (INTERMEDIATE)
URBAN (BUILT-UP)

(8) is ONE of the following:

LEVEL
ROLLING

(9) is ONE of the following:

FULL
PARTIAL
NONE

TITLE SHEET INFORMATION BLOCK

Figure 14-3C

PLANS PREPARED BY:	_____	PHONE NUMBER
CERTIFIED BY:	_____	DATE
APPROVED FOR LETTING:	_____	DATE
INDIANA DEPARTMENT OF TRANSPORTATION		

SIGNATURE BLOCK

Figure 14-3C (1)

DATUM	ACCURACY
PI	0 + 00.01
Δ	00° 00' 01"
<i>R</i> , existing alignment	0.01 ft
<i>R</i> , new alignment	10 ft
<i>T</i>	0.01 ft
<i>L</i>	0.01 ft
<i>E</i>	0.01 ft
SE	0.1%

HORIZONTAL-CURVE DATA ON PLAN SHEETS

Figure 14-3D