

# **DESIGN-BUILD LOW IMPACT BRIDGE REPLACEMENT SUBMITTAL GUIDELINES**

**April 12, 2012**

The submittal process used in the Design-Build program is a critical link to the successful delivery of Design-Build projects. The submittal process is geared for rapid review, while ensuring that the project is safe, environmentally conscious, satisfies all national and state codes and manuals, and fulfills the requirements set forth in the Request for Proposals. This document outlines the procedures to be followed by both the Design-Build Teams and Design-Build Group staff in the submittal, distribution, and review of plan submittals specifically for low impact bridge replacement projects.

# **GENERAL**

## **DESIGN AND PERSONNEL EXPECTATIONS**

The Design-Build Team (DBT) shall be responsible for designing in accordance with the Request for Proposal.

Prior to any submittals, the Design-Build Team shall provide the Design-Build Project Engineer with a list of key design and construction staff. The Department will reciprocate by providing the DBT with a list of Department contacts to be used when submitting plans for review. The list of Department contacts shall only be used to accurately complete the submittal forms. All submittal correspondence, both verbal and written, shall be directly among the DBT and the staff of the Design-Build Group, unless otherwise approved.

The comments, or lack thereof, provided by the Department in no way relieves the Design-Build Team of liability or the responsibility to correct any error in their plans, computations and / or construction. The Design-Build Team shall be required to make design and field construction corrections without additional compensation.

## **SCHEDULING OF SUBMITTALS**

The Design-Build Team shall prioritize submittals in the event that multiple submittals for the same bridge site or different bridge sites are made at the same time. Submittals for bridges and over the same waterway may be submitted simultaneously.

## **SUBMITTAL PROCESS**

Unless otherwise stated in the Final Contract Scopes of Work, all submittals shall be simultaneously delivered to both the Transportation Program Management Director and the Resident Engineer. Separate submittals will be required for each discipline at each individual bridge site. As noted herein or in the Final Contract, other concurrent distributions may be required of the DBT. Submittals shall be made in the number of copies as noted herein or otherwise noted in the Final Contract. Pertinent submittals may also require design calculations, files and special provisions. No construction work shall be performed prior to the Department's review, receipt of satisfactory response to the Department's comments, and the subsequent production of sealed Release for Construction Plans. All Release for Construction Plans shall be clearly labeled as RFC and signed and sealed by a Professional Engineer registered in the State of North

Carolina. The term RFC shall be solely reserved for those plans for which the Department agrees that no further review is necessary.

All submittals shall be accompanied with a standard color-coded submittal form. The Design-Build Team and the Design-Build Project Engineer will decide on a color for each project prior to the first submittal.

The number of copies and the information transmitted shall be clearly noted on the submittal form. A submittal containing multiple copies of the same information shall be transmitted with the copies individually packaged and covered with the appropriate submittal form. For example, a submittal containing four sets of plans and cross-sections shall be submitted as four individual rolls each containing one set of plans and one set of cross-sections. Each roll shall have an identical color-coded submittal form.

Each submittal shall be assigned a submittal number. This submittal number shall not have suffixes other than those reflecting re-submittals of the same information. Specifically, "Revise and Resubmit" submittal responses require the Design-Build Team to correct and re-submit the same information with the original submittal number and an "R" suffix. For example, submittal S-001 shall be revised to S-001R1 to reflect the first re-submittal and S-001R2 to reflect the second re-submittal of submittal S-001.

Each submittal form, cover sheet and plan sheet submitted shall clearly denote the six digit bridge number.

Submittals shall contain information for only one discipline for each bridge site. For example, if Structure Plans and Traffic Control Plans for a given site are submitted on the same day, two separate submittals shall be required. The Department will then forward the submittals to the appropriate reviewing personnel.

If an individual is copied on a submittal, it shall be clearly noted whether that individual received the attachments or simply a copy of the submittal form.

For projects that specific disciplines are not included in the Design-Build Team's or the Department's Scope of Work, submittal copies for that discipline are not required as noted herein.

## **RECORD DRAWINGS / AS-BUILT PLANS**

For those projects that the Department provides Construction Engineering Inspection the Design-Build Team shall provide Record Drawings. Specifically, upon completion of the project, and in addition to the sets required by the Resident Engineer, two sets of Record Drawings, signed and sealed by a Professional Engineer registered in the State of North Carolina, shall be submitted to the Transportation Program Management Director. The Transportation Program Management Director will retain one set and distribute one set to the appropriate Maintenance Unit.

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## **REVIEW TIME**

Unless otherwise noted herein or in the Final Contract Scopes of Work, submittals will be reviewed within ten working days (15 working days for FEMA compliance documents and temporary shoring) from the date of the Department's receipt. Submittals delivered to the Transportation Program Management Director shall be stamped in at the front desk before 2 pm to start the specified review period on that day. If submittals are received after 2 pm, the review period shall begin on the following business day. The 10-day review period includes only NCDOT workdays.

NCDOT will respond to all submittals by calling the contact person specified by the DBT and notifying them that plans and comments are available. The DBT will have the option to (1) pick up plans / comments at Transportation Program Management; (2) receive plans / comments by regular mail at no charge; or (3) receive plans / comments by overnight FED-EX at the DBT's expense. If possible, comments will be e-mailed or faxed and the original copy sent by one of the above methods.

## **SUBMITTAL RESPONSES**

The Transportation Program Management Director will respond to all submittals, with the exception of structure working drawings (Structure Design Unit will provide responses). The submittal response will include a standard response form that indicates whether the Department has comments or requires a re-submittal on that item.

The comments will be returned to the DBT as noted above. The Division Construction Engineer and the Resident Engineer will be notified by copy of all submittal

response forms returned to the DBT. Copies of the comments, particularly if made directly on the submitted plan sheets, will not be transmitted to either the Division Construction Engineer or the Resident Engineer, unless otherwise requested.

The staff of the Design-Build Group will maintain a database to ensure that all submittals are addressed within the allotted time. A copy of the log of all submittals for a given project is available to any Department staff upon request. The Design-Build Group staff will supply this log to the Resident Engineer periodically and upon request.

## **SUBMITTAL PREREQUISITES**

The Department shall not accept subsequent submittals until prior submittal reviews have been completed for that item. For example, the RFC submittal for a discipline shall not occur prior to the NCDOT final plan review, etc. for that same discipline.

Submittals shall be transmitted in a logical order and in accordance with the project CPM or submittal schedule most recently submitted by the DBT. However, if the DBT chooses to submit plans that require prerequisite reviews, the DBT assumes all risks should the prerequisite plan review result in comments that impact the current submittal. Should this occur, NCDOT will begin a new review period. Depending on the complexity of the project, certain iterations of these submittals may be waived by the Department.

The Design-Build Team shall notify the Department of any changes to previously reviewed submittals. For example, if the Department reviews the horizontal and vertical alignments, the DBT shall be required to advise of any subsequent revisions made to those alignments. A re-submittal of that item will generally be necessary. Similarly, any design / construction changes made after submittal of RFC Plans shall require a submittal for review and acceptance to ensure that dependent plan reviews are based on the most current and accurate information. At a minimum, this submittal shall follow the standard submittal guidelines, as well as the appropriate discipline prerequisites and review.

Any information included in a submittal for informational purposes shall be noted as such. For example, if the Roadway Plans are included to assist in reviewing the Traffic Control Plans, they shall be noted with "FYI".

## **SUBMITTALS REQUIRED BY DISCIPLINE**

All design submittals shall be made directly to the Transportation Program Management Director.

### **ROADWAY DESIGN**

The submittal of Roadway Plans will generally be comprised of the steps as outlined below. Plans for right-of-way recordation will also be required, if applicable. The various Roadway Plans also need to be submitted with plans for other disciplines, as noted throughout this document. Any changes to a stage of the Roadway Plans made after that stage's initial review and comment by the Department shall require re-submittal to ensure that dependent plan reviews are based on the most current and accurate Roadway Plans.

For guidance in preparing these plan submittals, see the document entitled "Roadway Design Guidelines for Design-Build Projects" located on the Design-Build website. All submittals shall adhere to the NCDOT Review requirements for Preliminary Plans and Release for Construction Plans (RFC) located on the Design-Build website.

The Design-Build Team shall develop plans using the current version of Microstation and Geopak software required by the Department and shall be in English units, unless otherwise noted in the Final Contract. The plans shall follow the Department's CADD standards including, but not limited to, file naming convention, leveling chart and file folder structure. These standards can be found through a link on the Design-Build website.

The Design-Build Team shall submit electronic files of the Roadway Plans upon request by the Department.

## **PRELIMINARY ROADWAY /100 % HYDRAULIC DESIGN PLANS**

The Design-Build Team shall submit the Design Exception Process Checklist with this submittal. Also, provide a brief explanation of any design changes from the approved BSR.

### Prerequisites:

- ✚ Approved Bridge Survey Reports

### Co-requisites:

- ✚ Submit one set of Design Criteria and Structure Recommendations to be reviewed concurrently with this submittal.

Total Number Required: (6 Full-size, 1 Half-size, 7 x-sections, Electronic Files)

- ✚ Division Construction Engineer (1 Full-size with x-sections)
  - Sent directly by the DBT
- ✚ Resident Engineer (1 Full-size with x-sections)
  - Sent directly by the DBT
- ✚ Division Bridge Program Manager (1 Full-size with x-sections)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 Full-size with x-sections, Design Calculations, & Electronic Files)
- ✚ Hydraulics Unit (1 Full-size with x-sections)
- ✚ Utilities Coordination Unit (If applicable) (1 Full-size with x-sections)
- ✚ Area Bridge Construction Engineer (1 Half-size with x-sections)
  - Sent directly by the DBT and for information only

## **RIGHT OF WAY / FINAL ROADWAY PLANS**

The Design-Build Team shall provide either Right of Way or Final Roadway Plans for review if additional ROW or easements are required. If the Design-Build Team is acquiring the right of way, this submittal shall be noted as Right of Way Plans, otherwise this submittal shall be referred to as Final Roadway Plans. In this submittal, denote any design changes made subsequent to the Preliminary Roadway Submittal. If applicable, provide a narrative of how the Design-Build Team has addressed conservation measures with this submittal.

The Design-Build Team shall provide a copy of the Right of Way Plans for right of way recordation in both electronic and hard copy format. Note that parcel numbers shall not be repeated at various bridge sites within the same contract.

Prerequisites:

- ✚ Approved Design Exceptions
- ✚ Accepted Preliminary Roadway / 100% Hydraulic Design Plans
- ✚ Accepted MOA Package
- ✚ Accepted Erosion Control Plans

Total Number Required: (4 - 5 Full-size, 3 Half-size, 7 – 8 x-sections, Electronic Files)

- ✚ Division Construction Engineer (1 Half-size with x-sections)
  - Sent directly by the DBT
- ✚ Resident Engineer (1 Full-size with x-sections)
  - Sent directly by the DBT
- ✚ Division Bridge Program Manager (1 Half-size with x-sections)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 Full-size with x-sections, & Electronic Files)
- ✚ Utilities Coordination Unit (if applicable) (1 Full-size with x-sections)
- ✚ Area Bridge Construction Engineer (1 Half-size with x-sections)
  - Sent directly by the DBT and for information only
- ✚ Right of Way Branch (1 Full-size with x-sections)
  - For information only
- ✚ Division Right of Way Agent (1 Full-size with x-sections)
  - Sent directly by DBT and for information only

**RFC ROADWAY PLANS**

The Design-Build Team shall provide a copy of the RFC Roadway Plans in both electronic and hard copy form. All final designs shall be signed and sealed by a Professional Engineer registered in the State of North Carolina.

Prerequisites:

- ✚ Submittal of Typical Sections for the Pavement Design Unit to sign and seal the pavement design, if applicable
- ✚ Approved Right of Way / Final Roadway Plans

Total Number Required: (4 Full-size, 4 Half-size, 7 x-sections, Electronic Files)

- ✚ Resident Engineer (2 Full-size with x-sections)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 Full-size, 1 Half-size with x-sections, & Electronic Files)
- ✚ Pavement Management Unit (1 Full-size)
- ✚ Area Bridge Construction Engineer (1 Half-size with x sections)
  - Sent directly by the DBT
- ✚ Division Construction Engineer (1 Half-size with x-sections)
  - Sent directly by DBT
- ✚ Division Bridge Program Manager (1 Half-size with x-sections)
  - Sent directly by the DBT

### **TEMPORARY ROADWAY ALIGNMENTS**

The Design-Build Team shall submit all temporary roadway alignments for review. The submittal of temporary roadway alignments shall adhere to the Final Plans requirements noted above.

#### Prerequisites:

- ✚ Accepted appropriate Traffic Control Phase

## **STRUCTURE DESIGN**

Plan submittals for bridges shall be submitted in three stages, Preliminary General Drawings, Final Bridge Substructure / Superstructure Plans and RFC Plans.

### **PRELIMINARY BRIDGE GENERAL DRAWINGS**

Preliminary General Drawings shall contain sufficient details (drawings or narrative) to explain the scope of design and construction intended for the bridge and shall list all anticipated special provisions and notes describing design data and material properties. For guidance on preparing Preliminary Bridge General Drawings, reference submittal link on the Design-Build website.

Prerequisites:

- ✚ Accepted Hydraulic Bridge Survey Report
- ✚ Accepted Preliminary Roadway / 100% Hydraulic Design Plans
- ✚ Provide one set of Half-size plans and reports / recommendations of the above to Transportation Program Management concurrently with this bridge submittal

Total Number Required: (2 Full-size, 5 Half-size)

- ✚ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 Half-size)
- ✚ Structure Design Unit (2 Half-size)
- ✚ Area Bridge Construction Engineer (1 Half-size)
  - Sent directly by DBT
- ✚ Geotechnical Engineering Unit (1 Half-size)
  - For information only

**BRIDGE SUBSTRUCTURE / SUPERSTRUCTURE FINAL PLANS**

Final Plans shall have all plan details and notes completed for final review. The Final Plans may be separated into substructure and superstructure or other submittals as necessary to accommodate construction schedules.

All comments by the Department, FHWA, Railroad, or other agency on all submittals shall be addressed in writing and by making appropriate changes to designs or drawings before construction of those elements begins.

Prerequisites:

- ✚ Accepted Preliminary Bridge General Drawings
- ✚ Accepted Bridge Geotechnical Foundation Recommendations
- ✚ Provide one set of recommendations to Transportation Program Management concurrently with this bridge submittal

Total Number Required: (2 Full-size, 6 Half-size)

- ✚ Division Construction Engineer (1 Half-size)
  - Sent directly by the DBT
- ✚ Division Bridge Program Manager (1 Half-size)
  - Sent directly by the DBT

- ✚ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 Half-size)
- ✚ Structure Design Unit (2 Half-size)
- ✚ Area Bridge Construction Engineer (1 Half-size)
  - Sent directly by DBT

### **BRIDGE RFC PLANS**

One complete full size original set of RFC Plans shall be submitted to the Structure Design Unit. A complete set of original design files and one complete set of Project Special Provisions (PSP) shall be submitted concurrently with the RFC Plans. Structure Project Special Provisions may be found through the Design-Build website. The record plan set, design files and Project Special Provisions shall bear the seal and signature of a North Carolina registered Professional Engineer.

Total Number Required: (2 Full-size, 8 Half-size, 8 sets of PSPs)

- ✚ Resident Engineer (2 Full-size and 2 sets of PSPs)
  - Sent directly by the DBT
- ✚ Transportation Program Management Unit (1 Half-size and 1 set of PSPs)
- ✚ Structure Design Unit (2 Half-size and 2 sets of PSPs)
- ✚ Materials and Tests Unit (2 Half-size)
  - For Prestressed Concrete Bridges only
- ✚ Area Bridge Construction Engineer (1 Half-size and 1 set of PSPs)
  - Sent directly by DBT
- ✚ Division Construction Engineer (1 Half-size and 1 set of PSPs)
  - Sent directly by DBT
- ✚ Division Bridge Program Manager (1 Half-size and 1 set of PSPs)
  - Sent directly by the DBT

### **WORKING DRAWING SUBMITTALS**

Working drawing submittals shall be in accordance with the 2006 “Submittal of Working Drawings” Project Special Provision available at the following site:

<http://www.ncdot.org/doh/preconstruct/highway/structur/psp/newpsp06/PSP029.doc>

Sufficient data and one set of the applicable RFC Plans shall be submitted prior to, or with, the working drawings to facilitate review.

These submittals shall be routed in one of two ways. The manner in which the submittal will be routed will be at the discretion of the Resident Engineer and will be determined shortly after award of the contract. The submittal routing will be either Type "A" or Type "B" and will be consistently used for all working drawing submittals throughout the project's duration.

Type "A" working drawing submittals shall be submitted directly to the Structure Design Unit as directed by the aforementioned Project Special Provision. These submittals will not be routed through the Transportation Program Management Director and need not have the color-coded transmittal form.

Type "B" working drawing submittals shall be submitted to the Transportation Program Management Director and shall be covered with a color-coded transmittal form. All other aspects of the aforementioned Project Special Provision apply, including the number of copies and concurrent submittal to the Resident Engineer. All Type "B" working drawing submittals shall include a submittal number with the prefix "WD-"

Responses to both Type "A" and Type "B" working drawing submittals will be routed directly to the Resident Engineer, with a copy of the response to the Transportation Program Management Director.

## **HYDRAULIC DESIGN**

Hydraulic design plans shall be incorporated into the Roadway Design Plans for submission to the Department for review. Bridge survey reports shall also be required unless otherwise noted in the Final Contract that the Department will provide them. Any design and / or construction methods that nullify a bridge survey report provided by the Department shall require the Design-Build Team to revise and submit the report as noted below. The Hydraulics Unit also reviews the LIBR permit drawing packages. The Design-Build Team is solely responsible for ensuring that the design plans exactly match those details included in the LIBR permit drawing sheets.

## **BRIDGE SURVEY REPORTS**

Prior to submittal of the Preliminary Roadway / 100% Hydraulic Design Plans, the Design-Build Team shall provide preliminary reports that are clearly identified as preliminary for the Units noted below.

Total Number Required: (2 Copies)

- |  |          |
|--|----------|
| ✚ Transportation Program Management Unit | (1 Copy) |
| ✚ Hydraulics Unit                        | (1 Copy) |

## **APPROVED BRIDGE SURVEY REPORTS**

Upon acceptance from the Department, the Design-Build Team shall provide a report signed and sealed by a Professional Engineer registered in the State of North Carolina for each of the Units noted below, for informational purposes only. **Any design modifications made after a bridge survey report has been approved by the Department shall require the Design-Build Team to revise, resubmit the report and redistribute upon approval.**

Total Number Required: (5 Copies)

- |   |          |
|---|----------|
| ✚ Transportation Program Management Unit        | (1 Copy) |
| ✚ Hydraulics Unit                               | (1 Copy) |
| ✚ Structure Design Unit                         | (1 Copy) |
| ✚ Geotechnical Engineering Unit Regional Office | (1 Copy) |
| • Sent directly by the DBT                      |          |
| ✚ Resident Engineer                             | (1 Copy) |
| • Sent directly by the DBT                      |          |

## **LIBR PERMIT DRAWINGS REVIEW SUBMITTAL**

This submittal shall include all LIBR permit drawings and documentation necessary for the Department to obtain the environmental permit(s) for each bridge. Prior to this submittal, the Design-Build Team is encouraged to coordinate with the Division Environmental Officer in order to ensure the correct permit drawings and documentation are being developed.

Prerequisites:

- ✚ Accepted Final Roadway Design /100% Hydraulic Plans
- ✚ Approved MOA Package (If Applicable)
- ✚ Accepted Erosion and Sedimentation Control Plans
- ✚ Accepted Utility Relocation Plans
- ✚ Accepted Preliminary Bridge General Drawings

Total Number Required: (7 Half-size and assoc. documentation)

- ✚ Transportation Program Management Unit (1 Half-size)
- ✚ Hydraulic Unit (1 Half-size)
- ✚ Division Environmental Officer (4 Half-size)
  - Sent directly by the DBT
- ✚ Resident Engineer (1 Half-size)
  - Sent directly by the DBT
- ✚ Area Bridge Construction Engineer (1 Half-size and 1 set of PSPs)
  - Sent directly by DBT

## **GEOTECHNICAL DESIGN**

The Geotechnical submittals shall consist of foundation recommendations, and temporary shoring plans and designs.

### **FOUNDATION DESIGN RECOMMENDATION REPORTS**

A Structure Foundation Design Recommendation Report and a Roadway Foundation Design Recommendation Report shall be required for each bridge site. All Foundation Design Recommendation Reports, plans, Project Special Provisions and calculations shall be signed and sealed by a registered Professional Engineer licensed in the state of North Carolina.

Total Number Required: (6 sets of all reports, PSPs, and calculations)

- ✚ Division Construction Engineer (1 set)
  - Sent directly by the DBT
- ✚ Division Bridge Program Manager (1 set)
  - Sent directly by the DBT
- ✚ Resident Engineer (1 set)
  - Sent directly by the DBT

- ✚ Transportation Program Management (1 set)
- ✚ Geotechnical Engineering Unit Regional Office (2 sets)
  - Sent directly by the DBT

### **SOIL IMPROVEMENT AND REINFORCED FILL DESIGNS**

Submit each soil improvement and reinforced fill design in two stages. The first shall be a conceptual design and the latter shall be a final design. The conceptual design shall be reviewed and accepted prior to submission of the final design. All designs shall be signed and sealed by a registered Professional Engineer licensed in the state of North Carolina.

Total Number Required: (6 sets of designs)

- ✚ Division Construction Engineer (1 set)
  - Sent directly by the DBT
- ✚ Division Bridge Program Manager (1 set)
  - Sent directly by the DBT
- ✚ Resident Engineer (1 set)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 set)
- ✚ Geotechnical Engineering Unit Regional Office (2 sets)
  - Sent directly by the DBT

## **TRAFFIC CONTROL**

The Traffic Control Plans shall be submitted in accordance with the Request for Proposal.

### **TRAFFIC CONTROL PHASE SUBMITTALS**

A separate submittal shall be required for each Traffic Control Phase unless prior approval of another submittal process is obtained from the Transportation Program Management Director.

Prerequisites:

- ✚ Accepted Preliminary Roadway / 100%Hydraulic Design Plans and x-sections
- ✚ Accepted Bridge / Culvert Preliminary General Drawings

Total Number Required: (3 Full-size and 5 Half-size)

- ✚ Division Construction Engineer (1 Half-size)
  - Sent directly by the
- ✚ Division Bridge Program Manager (1 Half-size)
  - Sent directly by the DBT
- ✚ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 Half-size)
- ✚ Work Zone Traffic Control Unit (1 Full-size and 1 Half-size)
- ✚ Division Traffic Engineer (1 Half-size)
  - Sent directly by the DBT

### **TRAFFIC CONTROL RFC PLANS**

The Design-Build Team shall release Traffic Control Plans for construction one phase at a time, unless prior approval is obtained from the Transportation Program Management Director.

Total Number Required: (3 Full-size and 5 Half-size)

- ✚ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 Half-size)
- ✚ Work Zone Traffic Control Unit (1 Full-size, 1 Half-size)
- ✚ Division Construction Engineer (1 Half-size)
  - Sent directly by the DBT
- ✚ Division Bridge Program Manager (1 Half-size)
  - Sent directly by the DBT
- ✚ Division Traffic Engineer (1 Half-size)
  - Sent directly by the DBT

### **SIGNING**

The Signing Plans shall follow the “Signing Design Guidelines for Design-Build Projects” located on the Design-Build website. Signing submittals shall be reviewed by the Signing Review Engineer at the following milestones:

## 100% FINAL SIGNING PLANS

This submittal shall include signing plan view sheets with all signs located by station reference, sign designs, completed Type E and F sign sheets, ground-mounted sign support chart with support designs and design calculation information. This submittal shall also include the General Notes sheet with list of applicable Roadway Standard Drawings, a draft of Project Special Provisions (other than those prepared and sealed by NCDOT), and all signing sheets and supporting documentation. A 4½" x 4½" area for full size sheets, directly below the project information block in the upper right corner of all sheets, shall be left blank and unobstructed.

Total Number Required: (2 Full-size, 6 Half-size)

- ✚ Division Construction Engineer (1 Half-size)
  - Sent directly by the DBT
- ✚ Division Bridge Program Manager (1 Half-size)
  - Sent directly by the DBT
- ✚ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ✚ Transportation Program Management (2 Half-size)
- ✚ Division Traffic Engineer (1 Half-size)
  - Sent directly by the DBT
- ✚ Regional Traffic Engineer (1 Half-size)
  - Sent directly by the DBT

## RFC SIGNING PLANS

This set of plans shall be clearly marked as RFC. All copies shall be signed and sealed by a Professional Engineer registered in the State of North Carolina. This submittal shall include (1) original set of Project Special Provisions signed and sealed by a Professional Engineer registered in the State of North Carolina (see the Project Special Provision section of the Signing Design Guidelines for Design-Build Projects); (2) design files on CD that have name of the Professional Engineer, registration number, and seal date inserted where seal, signature, and date are located on original plans; and (3) all other supporting documentation.

### Prerequisites:

- ✚ Field verification of "S" Dimensions for ground mounted and overhead sign assemblies

Total Number Required: (2 Full-size and 4 Half-size)

- ✚ Division Construction Engineer (1 Half-size)
  - Sent directly by the DBT
- ✚ Division Bridge Program Manager (1 Half-size)
  - Sent directly by the DBT
- ✚ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 Half-size)
- ✚ Division Traffic Engineer (1 Half-size)
  - Sent directly by the DBT
- ✚ Regional Traffic Engineer (1 Half-size)
  - Sent directly by the DBT

## **EROSION CONTROL DESIGN**

All Erosion and Sedimentation Control Plans shall be reviewed and accepted by the Department for each bridge site before **any** land disturbing activities, including clearing and grubbing, can commence on that site. The RFC Erosion Control Plans shall only be deemed final after the roadway drainage design has been finalized and accepted by the Department. Specifically, acceptance of all Erosion Control submittals shall be contingent on acceptance of the roadway drainage design. Design modifications developed after acceptance of the RFC Erosion Control Plans shall require the Design-Build Team to submit Intermediate Erosion Control Plans for review and acceptance as noted below. Each plan submittal shall include all pertinent design information required for review, such as design calculations, drainage areas, etc.

The NCDOT Roadside Environment Unit (REU) will provide a sample set of Erosion and Sedimentation Control plans and MicroStation Erosion Control workspace to the Design-Build Team upon request. The Design-Build Team shall coordinate a pre-design meeting between the NCDOT REU Soil and Water Engineering Section, the Design-Build Team and other pertinent NCDOT personnel before beginning the erosion control design. The Department shall only review Erosion and Sediment Control Plans after the aforementioned pre-design meeting. Release for Construction (RFC) Erosion Control Plans shall be accepted by the NCDOT REU and submitted to all NCDOT personnel listed below before **any** land disturbing activities, including clearing and grubbing, shall commence.

## **EROSION AND SEDIMENTATION CONTROL PLANS**

### Prerequisites:

- ✚ Accepted Preliminary Roadway / 100% Hydraulic Design Plans and x-sections
- ✚ Provide two sets of half-size Roadway Plans, that delineate the proposed slope / stake lines and drainage, as well as x-sections to Transportation Program Management concurrently with this submittal
- ✚ Provide one set of half-size Roadway Plans, that delineate the proposed slope / stake lines and drainage, as well as x-sections to the Roadside Environmental Field Operations Engineer concurrently with this submittal

### Total Number Required:

(3 Full-size and 4 Half-size)

- ✚ Division Construction Engineer (1 Half-size)
  - Sent directly by the DBT
- ✚ Division Bridge Program Manager (1 Half-size)
  - Sent directly by the DBT
- ✚ Resident Engineer (1 Full-size)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 Half-size)
- ✚ Roadside Environmental Unit (1 Full-size)
- ✚ Roadside Environmental Field Operations Engineer (1 Full-size)
  - Sent directly by the DBT
- ✚ Division Environmental Officer (1 Half-size)
  - Sent directly by the DBT

## **RFC EROSION CONTROL PLANS**

This submittal shall include eight sets of Project Special Provisions. Erosion Control Special Provisions are available through the Design-Build website.

### Prerequisites:

- ✚ Provide two sets of half-size RFC Roadway Plans, that delineate the proposed slope / stake lines and drainage, as well as x-sections to Transportation Program Management concurrently with this submittal.
- ✚ Provide two sets of half-size Roadway Plans that delineate the proposed slope / stake lines and drainage, as well as x-sections to the Area Roadside

Environmental Field Operations Engineer (Sent directly by DBT) concurrently with this submittal.

- ✚ Provide one set of half-size Permit Drawings to the Roadside Environmental Field Operations Engineer (Sent directly by DBT) concurrently with this submittal.

Total Number Required: (2 Full-size, 9 Half-size and 9 sets of PSPs)

- ✚ Resident Engineer (2 Full-size and 2 sets of PSPs)
  - Sent directly by the DBT
- ✚ Transportation Program Management (1 Half-size and 1 set of PSPs)
- ✚ Roadside Environmental Unit (2 Half-size and 1 set of PSPs)
- ✚ Roadside Environmental Field Operations Engineer (2 Half-size and 1 set of PSPs)
  - Sent directly by the DBT
- ✚ Division Environmental Officer (1 Half-size and 1 set of PSPs)
  - Sent directly by the DBT
- ✚ Division Construction Engineer (1 Half-size and 1 set of PSPs)
  - Sent directly by the DBT
- ✚ Division Bridge Program Manager (1 Half-size and 1 set of PSPs)
  - Sent directly by the DBT
- ✚ Area Bridge Construction Engineer (1 Half-size and 1 set of PSPs)
  - Sent directly by the DBT

## **FINAL SUBMITTAL**

Upon completion of the project, the Design-Build Team shall provide both electronic and hard copies of all bridge replacement plans included in the project. The hard copies shall adhere to the NCDOT Design Manual's plan preparation format.

Total Number Required: (3 Full-size and 3 Half-size, Electronic Files)

- ✚ Resident Engineer (1 Full-size and 1 Half-size)
  - Sent directly by the DBT
- ✚ Transportation Program Management (2 Full-size and 2 Half-size, DVD of all Microstation and GeoPak Files)