

**DESIGN-BUILD**  
**SUBMITTAL GUIDELINES**  
**May 2009**

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.

# GENERAL

## **Design and Personnel Expectations**

The Design-Build Team (DBT) shall be responsible for designing in accordance with the applicable national and state codes, standards, manuals, and current revisions and supplements thereto. Any design exceptions to these documents shall be pre-approved by the appropriate reviewing personnel and the FHWA, if applicable, prior to incorporation into the plan submittal. In addition, if a plan submittal incorporates or assumes a design exception, then the DBT shall note this fact clearly on the submittal form that accompanies that submittal.

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**

If a Critical Path Model is required for the project, major design milestones and required design submittals shall be identified as activities on the approved CPM for the project. The Design-Build Team shall prioritize submittals in the event that multiple submittals are made based on the approved CPM. If the project contract does not require a CPM, the DBT shall submit an initial schedule of anticipated submittals, denoting those submittals that are of critical importance to the project schedule. A new schedule shall be submitted if the critical submittals change or if the schedule or order of anticipated submittals is modified significantly.

## **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. 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. With the exception of Erosion Control 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.

Submittals shall contain information for only one discipline. For example, if Structure Plans and Traffic Control Plans 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 FHWA step-by-step projects, one additional set of plans and Project Special Provisions of all plans submittals shall be provided to the Transportation Program

Management Director. Unless otherwise noted herein, the staff of the Design-Build Team will make all distributions, including the set for the FHWA.

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.

For those projects that the Design-Build Team provides Construction Engineering Inspection the Design-Build Team shall provide As-Built Plans. Specifically, upon completion of the project, and in addition to the sets required by the Resident Engineer, two sets of As-Built Plans, 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.

### **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 temporary structures, overhead sign assemblies, MSE walls, curved steel girder working drawings, 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 100% submittal for a discipline shall not occur prior to the 25%, 50%, 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 may also have the option to divide a project into segments. This approach may prove beneficial to both the DBT and the Department on large projects. For example, the project may be broken into southern, middle and northern sections, resulting in three submittals for each milestone submittal. However, upon completion of the project design, the DBT will be required to provide one set of complete signed and sealed plans that include all design disciplines.

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 Signing 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 five steps, beginning with design criteria and culminating with RFC Plans. 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, Right of Way / 60%, and Final Plans 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.

### Design Criteria and Structure Recommendations

Total Number Required: (2 sets)

- Transportation Program Management (2 sets)

### **Line and Grade Plans**

At the request of the Design-Build Team, the Department will review Line and Grade Plans. This submittal shall include the Team's horizontal and vertical alignments and shall not replace the Preliminary Roadway Plans submittal.

### Prerequisites:

- Accepted Design Criteria (Provide one set with this submittal)
- Accepted Structure Recommendations

Total Number Required: (4 – 6 Full-size, 4 Half-size, Electronic Files)

- Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- Transportation Program Management (1 Full-size with design calculations)
- Utilities Coordination Unit (1 Full-size)
- Congestion Management Section (1 Half-size w/Capacity Analysis)
- Railroad Division, if applicable (1 Full-size)
- FHWA, if applicable (1 Full-size)
- Area Roadway Construction Engineer (1 Half-size)
  - Sent directly by the DBT and for information only
- Regional Traffic Engineer (1 Half-size)
  - Sent directly by the DBT and for information only
- Division Traffic Engineer (1 Half-size)
  - Sent directly by the DBT and for information only
- Roadway Lighting Section, if applicable (DVD of Microstation and GeoPak files)
- Location and Surveys Unit (1 Half-size)

## Preliminary Roadway Plans

### Prerequisites:

- ❑ Accepted Design Criteria (Provide one set with this submittal)
- ❑ Accepted Preliminary Bridge / Culvert Survey Reports (If grade is hydraulically controlled) or letter stating that grade is not hydraulically controlled
- ❑ Accepted Structure Recommendations

Total Number Required: (5 – 7 Full-size, 5 Half-size, 7 – 9 x-sections, Electronic Files)

- ❑ Resident Engineer (2 Full-size with x-sections)
  - Sent directly by the DBT
- ❑ Transportation Program Management (1 Full-size with x-sections & design calcs.)
- ❑ Hydraulics Unit (1 Full-size with x-sections)
- ❑ Utilities Coordination Unit (1 Full-size with x-sections)
- ❑ Congestion Management Section (1 Half-size w/Capacity Analysis)
- ❑ Railroad Division, if applicable (1 Full-size with x-sections)
- ❑ FHWA, if applicable (1 Full-size with x-sections)
- ❑ Area Roadway Construction Engineer (1 Half-size with x-sections)
  - Sent directly by the DBT and for information only
- ❑ Regional Traffic Engineer (1 Half-size with x-sections)
  - Sent directly by the DBT and for information only
- ❑ Division Traffic Engineer (1 Half-size with x-sections)
  - Sent directly by the DBT and for information only
- ❑ Roadway Lighting Section, if applicable (DVD of Microstation and GeoPak files)
- ❑ Location and Surveys Unit (1 Half-size with DVD of Microstation, GeoPak & .gpk files)

## Right of Way / 60% Roadway Plans

The Design-Build Team shall provide either Right of Way or 60% Roadway Plans for review. 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 60% Roadway Plans.

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.



Prerequisites:

- ❑ Approved Design Exceptions
- ❑ Accepted 100% Hydraulics Design Plans
- ❑ Accepted Preliminary Roadway Plans

Total Number Required: (6 – 8 Full-size, 3 Half-size, 9 – 11 x-sections)

- ❑ Resident Engineer (2 Full-size with x-sections)
  - Sent directly by the DBT
- ❑ Transportation Program Management (1 Full-size with x-sections)
- ❑ Utilities Coordination Unit (1 Full-size with x-sections)
- ❑ Railroad Division, if applicable (1 Full-size with x-sections)
- ❑ FHWA, if applicable (1 Full-size with x-sections)
- ❑ Area Roadway Construction Engineer (1 Half-size with x-sections)
  - Sent directly by the DBT and for information only
- ❑ Regional Traffic Engineer (1 Half-size with x-sections)
  - Sent directly by the DBT and for information only
- ❑ Division Traffic 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

### **Final Roadway Plans**

This submittal does not require all summary and quantity sheets.

**Total Number Required:** (3 - 4 Full-size with cross-sections)

- Resident Engineer (2 Full-size with x-sections)
  - Sent directly by the DBT
- Transportation Program Management (1 Full-size with cross-sections)
- FHWA, if applicable (1 Full-size with x-sections)

### **RFC Roadway Plans**

The Design-Build Team shall provide a copy of the RFC Roadway Plans (Final 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

**Total Number Required:** (3 – 4 Full-size, 7 Half-size, 10 – 11 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)
- Pavement Management Unit (1 Full-size)
- FHWA, if applicable (1 Full-size with x-sections)
- Area Roadway Construction Engineer (1 Half-size with x sections)
  - Sent directly by the DBT
- Roadway Lighting Section, if applicable (DVD of Microstation and GeoPak files)
- Division Traffic Engineer (1 Half-size with x-sections)
  - Sent directly by DBT
- Regional Traffic Engineer (1 Half-size with x-sections)
  - Sent directly by DBT
- Signals Section, if applicable (1 Half-size with x-sections)
- ITS Engineer, if applicable (1 Half-size with x-sections)
- Division Construction Engineer (1 Half-size with x-sections)
  - Sent directly by 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 Preliminary and Final Plans requirements noted above.

#### **Prerequisites:**

- Accepted appropriate Traffic Control Phase

## **Pavement Design**

The Pavement submittals shall consist of typical sections, shoulder drains and temporary pavement designs, including but not limited to the evaluation of existing shoulders and roadways regarding their suitability for carrying traffic.

### **Typical Sections**

This submittal shall include all typical sections, wedging details and pavement schedules required to build the project. Prior to submittal, the Design-Build Team's Roadway Design Engineer of Record shall have signed and sealed the typical sections.

#### **Prerequisites:**

- Accepted Final Roadway Plans (Include a full-size set, with cross sections)

**Total Number Required:** (1 Full-Size)

- Pavement Management Unit (1 Full-size)

### **Shoulder Drains**

This submittal shall include the shoulder drain locations, designs and outlet locations, including all required details.

#### **Prerequisites:**

- Accepted Final Roadway Plans (Include a full-size set, with cross sections)
- Accepted 100% Hydraulic Design

**Total Number Required:** (1 Full-Size)

- Pavement Management Unit (1 Full-size)

### **Temporary Pavement Design**

This submittal shall include all information / calculations required to review the temporary pavement design, including but not limited to the temporary traffic volumes, duration of use, existing pavement structure and geotechnical details.

Prerequisites:

- Accepted appropriate Traffic Control Plans

Total Number Required:

(1 Full-Size)

- Pavement Management

(1 Full-size)

## Structure Design

Plan submittals for bridges shall be delineated into two stages, preliminary and final. Culvert and noise wall plans may be submitted in one stage. For retaining wall plan submittals, see "Geotechnical Design" located elsewhere in this document.

### Bridge / Culvert Preliminary 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 Bridge Preliminary General Drawings, reference submittal link on the Design-Build website.

#### Prerequisites:

- ❑ Accepted Preliminary Roadway Plans
- ❑ Accepted Roadway Structure Recommendations
- ❑ Accepted Hydraulic Bridge / Culvert Survey Report
- ❑ 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, 6 – 8 Half-size)

- ❑ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ❑ Transportation Program Management (1 Half-size)
- ❑ Structure Design Unit (2 Half-size)
- ❑ State Bridge Construction Engineer (1 Half-size)
- ❑ Area Bridge Construction Engineer (1 Half-size)
  - Sent directly by DBT
- ❑ Railroad Division, if applicable (1 Half-size)
- ❑ FHWA, if applicable (1 Half-size)
- ❑ 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 Bridge Geotechnical Foundation Recommendations
- ❑ Provide one set of recommendations to Transportation Program Management concurrently with this bridge submittal

#### **Total Number Required:**

(2 Full-size, 4 - 6 Half-size)

- ❑ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ❑ Railroad Division, if applicable (1 Half-size)
- ❑ FHWA, if applicable (1 Half-size)
- ❑ Transportation Program Management (1 Half-size)
- ❑ Structure Design Unit (2 Half-size)
- ❑ Area Bridge Construction Engineer (1 Half-size)
  - Sent directly by DBT

### **Bridge / Culvert 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, 6 – 10 Half-size, 8 – 10 sets of PSPs)
- Resident Engineer (2 Full-size and 2 sets of PSPs)
    - Sent directly by the DBT
  - Railroad Division, if applicable (1 Half-size and 1 set of PSPs)
  - FHWA, if applicable (1 Half-size and 1 set of PSPs)
  - Transportation Program Management (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
  - State Bridge Construction Engineer (1 Half-size and 1 set of PSPs)
  - 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

### **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 not be submitted prior to the Department's acceptance of the Preliminary Roadway Plans. Culvert and 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 culvert or 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 key submittals for permit application packages. The Design-Build Team is solely responsible for ensuring that the design plans exactly match those details included in the permit impact sheets.

### Preliminary Bridge / Culvert Survey Reports

Prior to submittal of the Preliminary Roadway Plans, the Design-Build Team shall provide one of the following:

- If the proposed grade is not hydraulically controlled at bridge / culvert location(s), the Design-Build Team shall provide a letter to the Department stating such.
- If the proposed grade is hydraulically controlled at bridge / culvert location(s), 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

(1 Copy)

Hydraulics Unit

(1 Copy)

### Bridge / Culvert Survey Reports

#### Prerequisites:

Accepted Preliminary Roadway Plans and x-sections

Total Number Required: (3 Copies)

- Transportation Program Management (1 Copy)
- Hydraulics Unit (1 Copy)
- Resident Engineer
  - Sent directly by the DBT

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.

- Transportation Program Management
- Hydraulics Unit
- Structure Design Unit
- Geotechnical Engineering Unit Regional Office
  - Sent directly by the DBT
- Roadside Environmental Unit (If construction phasing is required)
- Resident Engineer
  - Sent directly by the DBT

#### **Concurrence Point 4B Meeting**

This submittal shall include the Title Sheet and all Plan Sheets. Two copies of each plan sheet shall be required, one with contour lines and one without. This submittal shall be submitted a minimum of five weeks prior to the 4B Meeting as applicable for review.

#### **Prerequisites:**

- Accepted Preliminary Roadway Plans and x-sections
- One set of Preliminary Roadway Plans to be submitted concurrently with this submittal

Total Number Required: (3 Half-size)

- Transportation Program Management (1 Half-size)
- Hydraulics Unit (include red-line drawings) (1 Half-size)
- PDEA (1 Half-size)

Upon acceptance from the Department, submit one set of half-size plans for each of the above Units and for each of the following agencies. This submittal shall provide adequate time for the Department to forward the plans to the agencies for their receipt a minimum of two weeks prior to the 4B meeting.

US Army Corps of Engineers  
US Fish and Wildlife Service  
EPA

NC Wildlife Resources Commission  
NC DENR - Division of Water Quality  
All Other Agencies and NCDOT Personnel as Needed

### **100% Hydraulic Design**

#### **Prerequisites:**

- ❑ Accepted Preliminary Roadway Plans and x-sections

#### **Number Required:**

(3 Full-size)

- ❑ Transportation Program Management (1 Full-size)
- ❑ Hydraulics Unit (include hydraulic calculations and red-line mark ups) (1 Full-size)
- ❑ Resident Engineer (1 Full-size)
  - Sent directly by the DBT

### **4C and / or Permit Application / Modification Review Submittal**

This submittal shall include all necessary documents required for a permit application including, but not necessarily limited to a cover letter, meeting minutes, plans, permit impact sheets and forms. This package shall be submitted a minimum of five weeks prior to the intended permit application submittal date or 4C meeting, as applicable.

#### **Prerequisites:**

- ❑ Accepted 100% Hydraulic Plans

Number Required:

(4 or 5 Half-size)

- Transportation Program Management (1 Half-size)
- Hydraulics Unit (1 Half-size)
- PDEA (2 Half-size)
- Structure Design Unit (If causeway is required) (1 Half-size)

Upon acceptance from the Department, submit one set of half-size plans and permit impact sheets for each of the above Units and for each of the following agencies. This submittal shall provide adequate time for the Department to forward the plans and permit impact sheets to the agencies for their receipt a minimum of two weeks prior to the 4C meeting.

US Army Corps of Engineers  
US Fish and Wildlife Service  
EPA

NC Wildlife Resources Commission  
NC DENR - Division of Water Quality  
All Other Agencies and NCDOT Personnel as  
Needed

## **Geotechnical Design**

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

### **Permanent Retaining Wall Layout**

For each retaining wall, with the exception of standard gravity walls, submit a wall layout and design. The wall layout submittal shall include (1) wall envelope with top and bottom of wall, existing ground and finished grade elevations at incremental stations; (2) wall alignment with stations and offsets; (3) typical sections showing top and bottom of wall, drainage, embedment, slopes, barriers, fences, etc.; and (4) details of conflicts with utilities and drainage structures. This submittal shall also include calculations for bearing capacity, global stability and settlement.

#### **Prerequisites:**

- ❑ Accepted Preliminary Roadway Plans and x-sections at wall locations
- ❑ Provide 1 Half-size set of each of the above concurrently with the wall layout

**Total Number Required:** (3 Full-size)

- ❑ Resident Engineer (1 Full-size)
  - Sent directly by the DBT
- ❑ Transportation Program Management (1 Full-size)
- ❑ Geotechnical Engineering Unit Regional Office (1 Full-size)
  - Sent directly by the DBT

### **Permanent Retaining Wall Design**

If temporary shoring is required to construct a retaining wall, submit the temporary shoring design as part of the wall design submittal.

#### **Prerequisites:**

- ❑ Accepted Retaining Wall Layout
- ❑ Temporary Shoring Design (if required for construction of retaining wall)
- ❑ Provide 1 set of each of the above with each Retaining Wall Design

Total Number Required: (3)

- Resident Engineer (1)
  - Sent directly by the DBT
- Transportation Program Management (1)
- Geotechnical Engineering Unit Regional Office (1)
  - Sent directly by the DBT

### **Foundation Design Recommendation Reports**

A separate Structure Foundation Design Recommendation Report shall be required for each structure, except permanent retaining walls, and one Roadway Foundation Design Recommendation Report is required for the entire project. All sound barrier foundations shall be addressed in a foundation design report and shall be considered one submittal. 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: (4 sets of all reports, PSPs, and calculations)

- 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: (4 sets of designs)

- 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 three distinct phases, including a staging concept, phase submittals and RFC Plans.

The Design-Build Team shall follow the “Guidelines for Preparation of Traffic Control and Pavement Marking Plans for Design Build Projects”, available through the Design-Build website, as a guideline for developing plans.

### **Traffic Control Staging Concept**

#### **Prerequisites:**

- ❑ Accepted Preliminary Roadway Plans and x-sections
- ❑ Accepted 30% Hydraulics Plans
- ❑ Accepted Bridge Preliminary General Drawings (if staging construction)
- ❑ Provide 1 set of the above with each staging concept submittal

#### **Total Number Required:**

(2 Full-size and 7 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)
- ❑ Signals Section, if applicable (1 Half-size)
- ❑ ITS Engineer, if applicable (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

### **Traffic Control Phase Submittals**

Phase submittals shall include more detailed information than that required for the staging concept. 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 Culvert and Structure Staging
- ❑ Accepted Temporary Signal Plans
- ❑ Provide 1 Half-size set of Signals Plans, if applicable

Total Number Required:

(2 Full-size and 7-8 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)
- ❑ Signals Section, if applicable (1 Half-size)
- ❑ Signing Section, if submittal contains detour signing (1 Half-size)
- ❑ ITS Engineer, if applicable (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

**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:

(2 Full-size and 6 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)
- ❑ Signals Section, if applicable (1 Half-size)
- ❑ ITS Engineer, if applicable (1 Half-size)
- ❑ Division Construction Engineer (1 Half-size)
  - Sent directly by the DBT
- ❑ Division Traffic Engineer (1 Half-size)
  - Sent directly by the DBT
- ❑ Regional Traffic Engineer (1 Half-size)
  - Sent directly by the DBT

## **Pavement Markers and Markings**

The Design-Build Team shall follow the “Guidelines for Preparation of Traffic Control and Pavement Marking Plans for Design-Build Projects”, available through the Design-Build website, as a guideline for developing plans

### **Preliminary Pavement Marking Plans**

#### **Prerequisites:**

- ❑ Accepted Right of Way / 60% Roadway Plans
- ❑ Provide 1 Half-size set of Right of Way / 60% Roadway Plans with this submittal

#### **Total Number Required:**

(2 Full-size and 6 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)
- ❑ Signing and Delineation Unit (1 Full-size, 1 Half-size)
- ❑ Signals Section, if applicable (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

### **Final Pavement Marking Plans**

#### **Prerequisites:**

- ❑ Final Signals Plans
- ❑ Provide 1 Half-size set of Final Signal Plans with this submittal

#### **Total Number Required:**

(2 Full-size and 6 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)
- ❑ Signing and Delineation Unit (1 Full-size, 1 Half-size)
- ❑ Signals Section, if applicable (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

### RFC Pavement Marking Plans

After the reviewed Final Pavement Marking Plan is returned, if any comments require changes to the plans, a sealed set of revised plans shall be required before final traffic control devices, final pavement markings and final pavement markers can be installed. Otherwise, the Final Pavement Marking Plans can be signed and sealed by a Professional Engineer registered in the State of North Carolina and re-distributed as RFC Plans as follows:

Total Number Required: (2 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)
- Signing and Delineation Unit (1 Full-size, 1 Half-size)
- Signals Section, if applicable (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
- Division Construction Engineer (1 Half-size)
  - Sent directly by the DBT

## Traffic Signal & Intelligent Transportation Systems

The Traffic Signal & Intelligent Transportation System Plans shall be divided into Preliminary, Final and RFC Plans. The Traffic Signal & Intelligent Transportation System Plans shall follow the “Guidelines for Preparation of Traffic Signal & Intelligent Transportation System Plans on Design-Build Projects” available on the Design-Build website.

For all plan submittals, the Design-Build Team shall provide the Department a copy of all supporting documentation, computer files and any other pertinent information as required for a complete and accurate review by the Department. Supporting documentation may include, but not be limited to the information shown in the Guidelines mentioned above.

The Design-Build Team shall develop plans using the current version of Microstation 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 Traffic Signal & Intelligent Transportation System Plans once they are released for construction.

### Traffic Signal Plans (Preliminary, Final and RFC)

<u>Total Number Required:</u>	(4 Full-size and 6 Half-size)
<input type="checkbox"/> Resident Engineer	(2 Full-size)
• Sent directly by the DBT	
<input type="checkbox"/> Transportation Program Management	(1 Half-size)
<input type="checkbox"/> Signals Section	(2 Half-size and 2 Full-size)
<input type="checkbox"/> ITS Section	(2 Half-size)
<input type="checkbox"/> Division Traffic Engineer	(1 Half-size)
• Sent directly by the DBT	
<input type="checkbox"/> Regional Traffic Engineer	(1 Half-size)
• Sent directly by the DBT	

### **Utility Make-Ready Plans (Preliminary, Final and RFC)**

**Total Number Required:** (4 Full-size and 5 Half-size)

- Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- Transportation Program Management (1 Half-size)
- ITS Section (2 Half-size and 2 Full-size)
- Signals Section (1 Half-size)
- Division Traffic Engineer (1 Half-size)
  - Sent directly by the DBT

### **Electrical and Programming Detail Plans (Final and RFC)**

Final Electrical and Programming Detail Plans shall be signed and sealed by a Professional Engineer registered in the State of North Carolina.

#### **Prerequisites:**

- Accepted Preliminary Traffic Signal Plans

**Total Number Required:** (7 Half-size and 2 Full-size)

- Resident Engineer (2 Half-size)
  - Sent directly by the DBT
- Transportation Program Management (1 Half-size)
- ITS Section (2 Half-size)
- Signals Section (3 Half-size and 2 Full-size)
- Division Traffic Engineer (1 Half-size)
  - Sent directly by the DBT

### **Communications Cable & Conduit Routing Plans (Preliminary, Final and RFC)**

Communication Cable and Conduit Routing Plans shall be signed and sealed by a Professional Engineer registered in the State of North Carolina.

#### **Prerequisites:**

- Accepted Final Utility Make-Ready Plans

Total Number Required: (2 Full-size and 8 Half-size)

- Resident Engineer (2 Half-size)
  - Sent directly by the DBT
- Transportation Program Management (1 Half-size)
- ITS Section (2 Full-size and 2 Half-size)
- Signals Section (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

### **Project Special Provisions (Final and RFC)**

Project Special Provisions shall cover all items of work, material, equipment and methods of construction for the installation of a complete traffic signal system that are not otherwise covered in the Standard Specifications for Roads and Structures, Dated July 2006. All Project Special Provisions shall be signed and sealed by a Professional Engineer registered in the State of North Carolina.

#### **Prerequisites:**

- Preliminary Traffic Signal Plans
- Preliminary Communications Cable & Conduit Routing Plans

Total Number Required: (7 sets)

- Resident Engineer (2 sets)
  - Sent directly by the DBT
- Transportation Program Management (1 set)
- ITS Section (1 set)
- Signals Section (2 sets)
- Division Traffic Engineer (1 set)
  - Sent directly by the DBT

### **Product Catalog Cut Sheets:**

Product Catalog Cut Sheets shall be submitted and shall include the manufacturer's make and model number for each piece of equipment, and the quantity of items to be used. The Engineer is not required to seal product catalog cut sheets.

Prerequisites:

- RFC Traffic Signal Plans
- RFC Electrical & Programming Detail Plans
- RFC Communications Cable & Conduit Routing Plans
- RFC Project Special Provisions

Total Number Required: (8 sets)

- Resident Engineer (2 set)
  - Sent directly by the DBT
- Signals Section (3 sets)
- Transportation Program Management (1 set)
- ITS Section (2 sets)

## Signing

Signing submittals shall generally be made in four phases. Prior to the submittal of the 50% plans, the Design-Build Team shall coordinate with the Division Traffic Engineer and Regional Traffic Engineer. This coordination shall occur through the Design-Build Group staff. 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:

### 25% Preliminary Signing Plans

The signing plan sheets and plan view rollout of the entire project shall include all existing, proposed and future signs (including messages), as well as all necessary sign relocations.

#### Prerequisites:

- Accepted Preliminary Roadway Plans and x-sections
- Provide one set of half-size Preliminary Roadway Plans to Transportation Program Management concurrently with this signing submittal

Total Number Required: (2 Full-size, 5 - 7 Half-size, and 1 Half-size roll-out)

- Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- Transportation Program Management (2 Half-size and 1 Half-size rollout)
- FHWA, if applicable (1 Half-size)
- Signing Section (1 Half-size)
- Signals Section, if applicable (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

### 50% Initial Signing Plans

This submittal shall include the revised 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



(S-Dimension Worksheets), and overhead structure line drawing(s), completed in the format of the final product.

Prerequisites:

- ❑ Meeting with Division and Regional Traffic Engineers, Design-Build Group and Signing Section to discuss the Preliminary Signing Plans
- ❑ Accepted Preliminary Roadway Plans and x-sections
- ❑ Provide one set of half-size Preliminary Roadway Plans to Transportation Program Management concurrently with this signing submittal

Total Number Required: (2 Full-size, 5 - 7 Half-size, and 1 Half-size roll-out)

- ❑ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ❑ Transportation Program Management (2 Half-size and 1 Half-size rollout)
- ❑ FHWA, if applicable (1 Half-size)
- ❑ Signing Section (1 Half-size)
- ❑ Signals Section, if applicable (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

**90% Interim Signing Plans**

This submittal shall include structure line drawings, and overhead sign lighting design sheets completed in the format of the final product, and all corrected signing sheets, sign designs of accepted Type A, B and Overlay signs on plan sheets, and supporting documentation required in the 50% submittal. If applicable, this submittal shall include an electronic version of the overhead sign lighting design. Transportation Program Management shall be capable of reviewing the lighting design using the software provided as outlined in the Standard Lighting Design Section of the Signing Design Guidelines for Design-Build Projects. Location of signalized intersections shall be provided to ensure the proper signing at intersections.

Prerequisites:

- ❑ Accepted Right of Way / 60% Roadway Plans
- ❑ Accepted Final Pavement Marking Plans
- ❑ Accepted Traffic Control Staging Concept
- ❑ Provide one set of half-size plans of each of the above to Project Services Unit concurrently with this signing submittal

Total Number Required: (2 Full-size, 5 - 6 Half-size, and 1 Half-size roll-out)

- ❑ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ❑ Transportation Program Management (2 Half-size and 1 Half-size rollout)
- ❑ FHWA, if applicable (1 Half-size)
- ❑ Signing Section (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

**100% Final Signing Plans**

This submittal shall 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 corrected signing sheets and supporting documentation required by the 90% submittal review. 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, 5 - 6 Half-size, and 1 Half-size roll-out)

- ❑ Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- ❑ Transportation Program Management (2 Half-size and 1 Half-size rollout)
- ❑ FHWA, if applicable (1 Half-size)
- ❑ Signing Section (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

## **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: (3 Full-size and 4 - 6 Half-size)

- Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- Transportation Program Management (1 Full-size and 1 Half-size)
- FHWA, if applicable (1 Half-size)
- Signing Section (1 Half-size)
- Signals Section, if applicable (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

## **Project Special Provisions**

The Design-Build Team shall provide complete Project Special Provisions for review with both the 100% and RFC Plan submittal. A Professional Engineer registered in the State of North Carolina shall sign and seal the final submittal of these Project Special Provisions. A copy of the signed and sealed Project Special Provisions shall be submitted in the manner and quantity designated above for the RFC Signing Plans. The Project Special Provisions shall also be submitted electronically to Transportation Program Management.



## **Erosion Control Design**

All Erosion and Sedimentation Control Plans shall be reviewed and accepted by the Department for each distinct project section before **any** land disturbing activities, including clearing and grubbing, can commence on that project section. The RFC Final Grade 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, prior to and including the RFC Final Grade Erosion Control Plans, shall be contingent on acceptance of the roadway drainage design. Design modifications developed after acceptance of the RFC Final Grade 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) Final Grade 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.

### **75% Clearing & Grubbing Review Plans**

#### **Prerequisites:**

- ❑ Accepted Roadway Line and Grade or Preliminary Roadway Plans and x-sections
- ❑ Pre-design meeting with the NCDOT REU Soil and Water Engineering Section, the Design-Build Team and any other pertinent NCDOT personnel
- ❑ Provide two sets of half-size Roadway Plans, that delineate the proposed slope / stake lines, and 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 x-sections to the Roadside Environmental Field Operations Engineer concurrently with this submittal

Total Number Required: (3 Full-size and 2 Half-size)

- 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

**100% Clearing & Grubbing Review Plans**

Prerequisites:

- Provide two sets of half-size Roadway Plans, that delineate the proposed slope / stake lines, and 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 x-sections to the Roadside Environmental Field Operations Engineer concurrently with this submittal

Total Number Required: (3 Full-size and 2 Half-size)

- 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 Clearing & Grubbing Plans**

### **Prerequisites:**

- 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:**

(2 Full-size and 6 Half-size)

- Resident Engineer (2 Full-size)
  - Sent directly by the DBT
- Transportation Program Management (1 Half-size)
- Roadside Environmental Unit (2 Half-size)
- Roadside Environmental Field Operations Engineer (1 Half-size)
  - Sent directly by the DBT
- Division Environmental Officer (1 Half-size)
  - Sent directly by the DBT
- Roadway Construction Engineer (1 Half-size)
  - Sent directly by the DBT

## **75% Final Grade Erosion Control Plans**

### **Prerequisites:**

- 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 2 Half-size)

- 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

### 100% Final Grade Erosion Control Plans

Prerequisites:

- Accepted Final Roadway Plans and x-sections when the Design-Build Team is acquiring the permit
- Accepted 100% Hydraulic Plans when the Design-Build Team is acquiring the permit
- 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 2 Half-size)

- 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 Final Grade Erosion Control Plans**

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

**Total Number Required:** (2 Full-size, 7 Half-size and 8 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(1 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
- Roadway Construction Engineer (1 Half-size and 1 set of PSPs)
  - Sent directly by the DBT

### **Intermediate Plans (if required)**

This submittal shall be required if design modifications and / or site conditions require additional erosion control design or design revisions to the RFC Clearing and Grubbing and / or the RFC Final Grade Erosion Control Plans. This submittal shall also be required to review all basins requiring individual calculations. The NCDOT REU shall review and accept Intermediate Plans prior to construction of any aspect impacted by the revised erosion control design.

#### **Prerequisites:**

- Accepted Roadway and / or Hydraulic Plans of the design modifications
- 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

- Provide one set of basin calculations to Transportation Program Management and the Roadside Field Operations Engineer concurrently with this submittal

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)
- Roadside Environmental Unit (2 Half-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
- Roadway Construction Engineer (1 Half-size)
  - Sent directly by the DBT

## Lighting

Two stages of Roadway Plan submittals will enable the Department to finalize lighting designs and plans based on the Design-Build Team's Preliminary Roadway Plans and Release for Construction (RFC) Roadway Plans. Submit one set of electronic and hard copy Preliminary Roadway Plans and RFC Roadway Plans to the Transportation Program Management Director to enable the light standard locations and details to be finalized.

Submit pole and foundation designs and details directly to the Transportation Program Management Director.

## Railroad Insurance

Prior to commencing any activities within a railroad right of way, insurance approval shall be obtained, per activity, from the appropriate railroad(s). The Design-Build Team shall concurrently submit two copies of the insurance documents, which contain all the railroad requirements, to the Transportation Program Management Director and one copy to the Resident Engineer. The Transportation Program Management Director will forward the insurance documents to the NCDOT Rail Division for coordination with the appropriate railroad(s).

## Final Submittal

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

Total Number Required: (3 Full-size and 5 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)
- FHWA, if applicable (1 Half-size)
- Roadway Construction Engineer (1 Half-size)
  - Sent directly by the DBT