-- STATE OF NORTH CAROLINA--
DEPARTMENT OF TRANSPORTATION
RALEIGH, N.C.

FINAL REQUEST FOR PROPOSALS

DESIGN-BUILD PROJECT

Projects 17BP.6.R.77

October 18, 2016

VOID FOR BIDDING

DATE AND TIME OF PRICE PROPOSAL OPENING: **November 15, 2016 AT 2:00 PM**

CONTRACT ID: C203950

WBS ELEMENT NO.: 17BP.6.R.77

COUNTIES: Robeson County

ROUTE NO. Various

MILES: 0.417 miles

LOCATION: Replacement of Six Bridges in Robeson County

TYPE OF WORK: DESIGN-BUILD AS SPECIFIED IN THE SCOPE OF WORK CONTAINED IN THE REQUEST FOR PROPOSALS

NOTICE:

ALL PROPOSERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE PROPOSER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS $30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. PROPOSERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOT WITHSTANDING THESE LIMITATIONS ON BIDDING, THE PROPOSER WHO IS AWARDED ANY PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING, REGARDLESS OF FUNDING SOURCES.

_____ 5% BID BOND OR BID DEPOSIT REQUIRED

_____

PROPOSAL FORM FOR THE CONSTRUCTION OF CONTRACT NO. C203950

IN ROBESON COUNTY
NORTH CAROLINA

Date_____ 2016_____

DEPARTMENT OF TRANSPORTATION,

RALEIGH, NORTH CAROLINA

The Design-Build Team herein acknowledges that it has carefully examined the location of the proposed work to be known as Contract No. C203950, has carefully examined the Final Request for Proposals (RFP) and all addendums thereto, specifications, special provisions, the form of contract, and the forms of contract payment bond and contract performance bonds, which are acknowledged to be part of the Contract; and thoroughly understands the stipulations, requirements and provisions. The undersigned Design-Build Team agrees to be bound upon their execution of the Contract and including any subsequent award to them by the Secretary of Transportation in accordance with this Contract to provide the necessary contract payment bond and contract performance bond within fourteen calendar days after the written notice of award is received by them.

The undersigned Design-Build Team further agrees to provide all necessary materials, machinery, implements, appliances, tools, labor, and other means of construction, except as otherwise noted, to perform all the work and required labor to design, construct and complete all the work necessary for State Highway Contract No. C203950 in Robeson County by no later than the dates(s) specified in the Final RFP, and any addenda thereto, and in accordance with the requirements of the Engineer, the Final RFP and Addenda thereto, the *2012 Standard Specifications for Roads and Structures*, and specifications prepared by the Department, at the price(s) bid by the Design-Build Team in their Price Proposal.

The Design-Build Team shall provide signed and sealed documents prepared by the Design-Build Team, which specifications and plans show the details covering this project and adhere to the items noted above.

The Design-Build Team acknowledges that project documents furnished by the Department are preliminary and provided solely to assist the Design-Build Team in the development of the project design. Unless otherwise noted herein, the Department does not warrant or guarantee the sufficiency or accuracy of any information furnished by the Department.

The Department does not warrant or guarantee the sufficiency or accuracy of any investigations made, nor the interpretations made or opinions of the Department as to the type of materials and conditions to be encountered at the project site. The Design-Build Team is advised to make such independent investigations, as they deem necessary to satisfy their self as to conditions to be encountered on this project. The Design-Build Team shall have no claim for additional compensation or for an extension of contract time for any reason resulting from the actual conditions encountered at the site differing from those indicated in any of the information or documents furnished by the Department except as may be allowed under the provisions of the Standard Specifications.

The Design-Build Team shall assume full responsibility, including liability, for the project design, including the use of portions of the Department design, modification of such design, or other designs as may be submitted by the Design-Build Team.

The Design-Build Team shall be fully and totally responsible for the accuracy and completeness of all work performed under this contract, and shall indemnify and hold the Department harmless for any additional costs and all claims against the Department or the State which may arise due to errors or omissions of the Department in furnishing the preliminary project designs and information, and of the Design-Build Team in performing the work.

The published volume entitled *North Carolina Department of Transportation, Raleigh, Standard Specifications for Roads and Structures, January 2012,* as well as, all design manuals, policy and procedures manuals, and AASHTO publications and guidelines referenced in the Request For Proposals, with all amendments and supplements thereto, are by reference, incorporated and made part of this contract; that, except as herein modified, all the design, construction and, as applicable, construction engineering and inspection included in this contract is to be done in accordance with the documents noted above and under the direction of the Engineer.

The contract is valid only when signed either by the Contract Officer or such other person as may be designated by the Secretary to sign for the Department of Transportation. The conditions and provisions herein cannot be changed except by written approval as allowed by the Request for Proposals.

Accompanying the Design-Build Proposal shall be a bid bond secured by a corporate surety, or certified check payable to the order of the Department of Transportation, for five percent of the total bid price, which deposit is to be forfeited as liquidated damages in case this bid is accepted and the Design-Build Team shall fail to provide the required payment and performance bonds with the Department of Transportation, under the condition of this proposal, within 14 calendar days after the written notice of award is received by them, as provided in the Standard Specifications; otherwise said deposit will be returned to the Design-Build Team.

NORTH CAROLINA PROFESSIONAL SEAL 21140 ENGINEER ROGER D ROCHELLE

10/17/16

Technical Services Administrator

NORTH CAROLINA PROFESSIONAL SEAL 21076 ENGINEER RANDY A. GARRIS

10/17/16

State Contract Officer

TABLE OF CONTENTS

COVER SHEET

PROPOSAL SHEETS

PROJECT SPECIAL PROVISIONS *PAGE NO.*

Contract Time and Liquidated Damages 1
Intermediate Contract Time Numbers 1-5 and Liquidated Damages 1
Measurement and Payment 2
Design and Construction Itemization.....6
Alternate Lump Sum Bid 6
Mobilization.....7
Sequence and Schedule Restrictions.....7
Submittal of Quantities, Fuel Base Index Price and Opt-Out Option.....7
Confidential Questions.....8
Value Analysis 9
Schedule of Estimated Completion Progress 10
Minority Business Enterprise and Women Business Enterprise 10
Resource Conservation and Environmentally Sustainable Practices.....24
Subsurface Information.....25
Domestic Steel 25
Twelve Month Guarantee 25
Outsourcing Outside the USA.....26
Iran Divestment Act. 26
Permanent Vegetation Establishment. 27
Erosion & Sediment Control / Storm Water Certification.....27
Procedure for Monitoring Borrow Pit Discharge.....33
Clearing and Grubbing.....34
Pipe Installation 35
Drainage Pipe.....35
Price Adjustments for Asphalt Binder 36
Price Adjustments - Asphalt Concrete Plant Mix 36
Asbestos Assessment for Bridge Demolition and Renovation Activities.....36

GENERAL 39

SCOPES OF WORK

Roadway 45
Structures 49
Hydraulics Design.....53
Geotechnical Engineering.....56
Pavement Management.....61

Traffic Engineering 62
Environmental Permits 67
Erosion and Sedimentation Control 70
Utilities Coordination 76
Right of Way 81

STANDARD SPECIAL PROVISIONS

Value Engineering Proposals 85
Plant and Pest Quarantines 86
Gifts from Vendors and Contractors 87
Liability Insurance 88
State Highway Administrator Title Change 88
Subletting of Contract 88
Name Change for NCDENR 88
Select Granular Material 88
Bridge Approach Fills 89
Class IV Aggregate Stabilization 90
Aggregate Base Course 91
Asphalt Pavements - Superpave 91
Asphalt Binder Content of Asphalt Plant Mixes 96
Asphalt Plant Mixtures 96
Subsurface Drainage 96
Guardrail Anchor Units, Type 350 (TL-2) 96
Guardrail Anchor Units, Type 350 (TL-3) 97
Preformed Scour Hole with Level Spreader Apron 98
Street Signs and Markers and Route Markers 99
Materials 100
Select Material, Class III, Type 3 110
Shoulder and Slope Borrow 111
Grout Production and Delivery 111
Geosynthetics 116
Temporary Shoring 121
Grout References for Positive Protection 133
On-the-Job Training 133
Availability of Funds – Termination of Contracts 136
NCDOT General Seed Specifications for Seed Quality 137
Errata 140
Award of Contract 142
Minimum Wages 148
Division One 149

PROPOSAL FORMS

Itemized Proposal Sheet

*** PROJECT SPECIAL PROVISIONS ***

CONTRACT TIME AND LIQUIDATED DAMAGES

07/12/07 DB1 G04A

The date of availability for this contract is January 3, 2017, except that the Design-Build Team shall not begin ground disturbing activities, including utility relocations (this does not include permitted investigative borings covered under a Nationwide Permit No. 6) until a meeting is held between the NCDOT, the regulatory agencies and the Design-Build Team.

The Design-Build Team shall not begin ground disturbing activities at any given site, until the applicable permits have been acquired for that site, as stipulated in the Environmental Permits Scope of Work contained elsewhere in this Request for Proposals (RFP).

The completion date for this contract is June 15, 2020.

When observation periods are required by the special provisions, they are not a part of the work to be completed by the completion date and/or intermediate contract times. Should an observation period extend beyond the final completion date, the acceptable completion of the observation period shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **One Thousand Dollars ($1000.00)** per calendar day.

INTERMEDIATE CONTRACT TIME NUMBER 1 – 5 AND LIQUIDATED DAMAGES

(3-22-07) DB G07

Intermediate Contract Times #1 through #5 are for the duration of road closure to complete all work per bridge site, including but not limited to the construction of all bridge, approach roadway and approach slab components, without the need for subsequent lane closures. Liquidated Damages for Intermediate Contract Times #1 through #5 are listed in the Table below.

ICT Number	County	Structure No.	Route	Intermediate Contract Time (calendar days)	Liquidated Damages (per calendar day)
1	Robeson	770026	SR 1955	165	$600
2	Robeson	770413 & 770414	SR 1323	270	$750
3	Robeson	770223	SR 1303	150	$600
4	Robeson	770432	SR 1157	155	$600
5	Robeson	770433	SR 1160	180	$600

Note that ICT #2 is the road closure for two bridges to be replaced under the same road closure.

The Department will allow a maximum of five days of additional lane closure per site to solely address punch list items identified by the Engineer. The additional five days are not included in ICT #1 through #5, and not subject to associated liquidated damages. As approved by the Engineer, lane closures will also be allowed for geotechnical borings and the relocation of utilities prior to the road closure at each bridge site, and therefore are not included in the ICT #1

through #5, and not subject to associated liquidated damages. Lane closures for any other reason required by the Design-Build Team will be considered road closure.

The date of availability for Intermediate Contract Times #1 through #5 shall be defined in writing by the Design-Build Team to the Engineer a minimum of 30 days prior to road closure. The date of availability for Intermediate Contract Times #1 through #5 shall in no case occur before the receipt of all permits for each given bridge site required by the Environmental Permits Scope of Work.

MEASUREMENT AND PAYMENT

This "Measurement and Payment" Project Special Provision does not apply to bridges for which the Design-Build Team has elected to forego the unit price bid approach and instead has elected to submit an alternate lump sum bid for the design and construction of a bridge. Reference the "Alternate Lump Sum Bid" Project Special Provision.

Reference is made to the following pay items listed per bridge site on the Itemized Proposal Sheet:

Bridge Length (LF): *Bridge Length* will be measured from fill face to fill face and paid in units of linear feet as measured along the centerline of the bridge of actual bridge length constructed. Work will include all materials, labor, and equipment to construct the superstructure portion of the bridge as taken from the bottom of the superstructure to the top of the bridge rail, excluding asphalt wearing surface. This work does not include bearing devices, anchors bolts or other such connection.

Payment will be made under:

Pay Item	**Pay Unit**
Bridge Length Structure _____	Linear Feet

Foundation Length (LF): *Foundation Length* will be measured from the elevation at the top of the piles to the average pile tip elevation actually installed at a given end bent or interior bent and will be paid for in units of linear feet. The final foundation pay length per bent or end bent will be determined by dividing the total pile lengths measured as defined above by the total number of piles per bent or end bent. Work will include all materials, labor, and equipment to install and construct the foundations, including pile auguring as necessary, regardless of the number of piles per bent, including that portion of the piles or drilled piers that extend into the end bent or interior bent cap. In the event that additional interior bents are required beyond that specified in the Structures Scope of Work, the unit price bid for linear feet of Foundation Length for the closest interior bent will be used to compensate for the additional length of columns/drilled piers.

Payment will be made under:

Pay Item	**Pay Unit**
Average Foundation Length at End Bent #1 Structure _____	Linear Feet
Average Foundation Length at Interior Bent #___ Structure_____	Linear Feet
Average Foundation Length at End Bent #2 Structure _____	Linear Feet

Interior Bent Caps (Each): *Interior Bent Caps* will be measured and paid for by each. Work will include all material, labor, and equipment to construct each interior bent cap, including the necessary bearing devices, anchors bolts or other such connection.

Payment will be made under:

Pay Item	**Pay Unit**
Interior Bent Caps Structure _____	Each

End Bents (Each): *End Bents* will be measured and paid for by each. Work will include all material, labor, and equipment to construct each end bent, including the necessary bearing devices, anchors bolts or other such connection, and wing walls.

Payment will be made under:

Pay Item	**Pay Unit**
End Bents Structure _____	Each

Design and Construction for Bridges (LS): *Design and Construction for Bridges* will be paid for as lump sum. No measurement will be made. Work will include all material, labor and equipment to complete all of the work required by the contract at all sites specified as bridges in this RFP, excluding those specific contract unit price items listed above. Work will include all preconstruction activities including, but not limited to, design, permitting, asbestos assessment of existing bridge, utility coordination services and other preconstruction services, regardless of the final design, bridge length, foundation length, or number of interior bents. Work will also include all other construction required by the contract including, but not limited to, erosion and sediment control, earthwork, drainage, pavement, signing, bridge approach fills, wing wall extensions, approach slabs, temporary shoring, removal of existing structure and guardrail. Work will also include all surveying and geotechnical investigative work as may be required by the contract.

Work will also include any additional materials and labor needed to provide up to a 1'-6" increase in the existing roadway grade to satisfy all contract requirements, including FEMA compliance, as applicable.

Payment will be made under:

Pay Item	**Pay Unit**
Design and Construction of Bridges	Lump Sum

Right of Way Acquisition (EA): *Right of Way Acquisition* services will be paid for per each parcel from which a utility easement and/or right of way is required. Work will include all labor and services necessary to acquire the easements/right of way as required by the Right of Way Scope of Work.

Payment will be made under:

Pay Item	**Pay Unit**
Right of Way Acquisition	Each

Adjustments to Quantities and Payment

The Itemized Proposal Sheet provides the quantity of linear feet of *Bridge Length, Foundation Length* and the quantity of *Interior Bent Caps* to be bid for each bridge site. By submitting this Price Proposal, the Design-Build Team acknowledges that these quantities are intended for bidding purposes and may or may not be the final design quantities. Unless otherwise noted in the Structures Scope of Work, in the event that the final design quantities for *Bridge Length Foundation Length* and *Interior Bent Caps* differ from those presented in the Itemized Proposal Sheet, adjustment will be made to the partial payments made to Design-Build Team per the applicable contract unit prices.

The Itemized Proposal Sheet provides the quantity of parcels from which utility easement or right of way will be required across all bridge sites. By submitting this Price Proposal, the Design-Build Team acknowledges that this quantity is intended for bidding purposes and may or may not be the final quantity. In the event that the final quantity of impacted parcels differs from that shown in the Itemized Proposal Sheet, adjustment will be made to the partial payments made to the Design-Build Team per the unit price bid per Each for *Right of Way Acquisition.*

All contract pay items for this contract are considered minor contract items.

No adjustments to the pay quantities will be made until such time that all pertinent design submittals are approved and all permits and FEMA compliance for a given structure site have been obtained.

In the event of any increase in any of the above quantities, the Design-Build Team will be required to demonstrate through the pertinent design submittals the need for the additional quantities.

In the event of any decrease in any of the above quantities, the Design-Build Team will be eligible for an incentive for such reduction (reference the Project Special Provision entitled "Value Analysis"). This incentive and special provision do not apply to the line item for *Right of Way Acquisition.*

If during the course of the design phase, the Design-Build Team proposes a span arrangement that eliminates the contract line item for *Interior Bent Caps* for that bridge, then the provisions of Article 104-12 of the Standard Specifications will apply.

If during the course of design, the Design-Build Team demonstrates to the Department's satisfaction that a bridge that is proposed as a one span bridge herein must be revised to a multiple span bridge such that a new line item for Interior Bent caps is required, then the provisions of Article 104-7 of the Standard Specifications will apply.

Any bridge length specified in the Structure Scope of Work of 70 feet or less shall be cored slab unless otherwise specified therein. If during the course of the design, the Design-Build Team demonstrates to the Department's satisfaction that a bridge that is specified in the Structure Scope of Work as 70 feet or less must be revised to a length in excess of 70 feet such that a cored slab design will not suffice, then adjustment will be made to the partial payments made to Design-Build Team per the unit price bid for linear feet of *Bridge Length*. In addition, the provisions of Article 104-7 of the Standard Specifications will apply as to the change from a cored slab superstructure to the final design superstructure type.

The Structure Scope of Work does not specify a size of superstructure (e.g. 21" deep cored slab) or foundation pile size (e.g. 12 x 53); instead the determination of these sizes is the responsibility of the Design-Build Team. No additional compensation will be provided for any increase in specific size of superstructure or foundation type. However, if during the course of the design or permitting phase, the Design-Build Team demonstrates to the Department's satisfaction that the foundation type (e.g. steel piles or drilled piers) or superstructure type (e.g. cored slab), as specified in the Structures Scope of Work will not be adequate, then the provisions of Article 104-7 of the Standard Specifications will apply. For bridges that are proposed as multiple span bridges in the Structure Scope of Work, cored slabs and box beams are considered to be the same superstructure type for this purpose.

If during the course of the design or permitting phase, the Design-Build Team proposes a more economical foundation type or superstructure type from those specified in the Structures Scope of Work, then the provisions of Article 104-12 of the Standard Specifications will apply.

In the event, that the width of superstructure specified in the Structures Scope of Work is inadequate, as demonstrated through the pertinent approved design submittals, then provisions of Article 104-7 of the Standard Specifications will apply. In such case, the unit contract price bid per Each for *Interior Bent Caps* and *End Bents* will be prorated based on the difference in length of cap needed for the bridge width stated herein and the final design bridge width. If the Design-Build Team demonstrates to the Department's satisfaction that the extra bridge width requires an additional pile, then the payment quantity for Foundation Length will be prorated based on the number of piles needed for the bridge width stated herein and that for final design bridge width. The payment quantity for Linear Feet of *Bridge Length* will be prorated by multiplying the payment quantity provided in the Itemized Proposal Sheet by the ratio of the final design bridge width divided by the bridge width specified herein. No additional compensation for the lump sum item *Design and Construction of Bridges* will be provided for additional bridge width.

If during the course of the design, the Design-Build Team determines that the existing roadway grade must be raised by more than 1'-6" to accommodate other contract requirements, including FEMA compliance, then the provisions of Article 104-7 of the Standard Specifications will apply to the work items covered by the *Design and Construction of Bridges* line item to the extent needed beyond the 1'-6" grade change already accommodated in the lump sum price bid for *Design and Construction of Bridges.*

DESIGN AND CONSTRUCTION ITEMIZATION

(3-21-15) EDB

Reference is made to the Measurement and Payment Project Special Provision and the pay item for *Design and Construction of Bridges* contained therein. Within 30 days after award of the contract, the Design-Build Team shall submit to the Engineer, an itemization of the anticipated costs associated with the work items contained in the amount bid for *Design and Construction of Bridges*. The itemization shall, at a minimum, break out the costs for design, other preconstruction services, the summation of all typical roadway pay items and a breakdown of all typical bridge pay items.

ALTERNATE LUMP SUM BID

The Design-Build Team may provide an alternate lump sum bid for each bridge, excluding Bridge No. 770413.

If the Design-Build Team elects to submit an alternate lump sum bid for one or more of the bridges, the Design-Build Team shall be solely responsible for all costs, including but not limited to, overruns, additional design, and any additional right-of way, additional utility relocation, or additional mitigation costs that would not otherwise have been attributable to the bridge description specified in the Structures Scope of Work. The Design-Build Team also must forego any additional compensation that would have otherwise been afforded under the "Value Analysis" and "Measurement and Payment" Project Special Provisions. In addition, providing an alternate lump sum bid does not relieve the Design-Build Team of any contract requirements including permitting agency requirements, hydraulic design requirements, and FEMA compliance requirements. The bridge design shall not rely upon any design exceptions except to the extent that may be specifically permitted in the Roadway Scope of Work.

With the exception of *Right-of-Way Acquisition* services, which will still be paid on a unit basis, the lump sum bid entered on the Itemized Proposal Sheet will be full compensation for all work necessary at the applicable bridge site, including all pay items outlined in the Measurement and Payment" Project Special Provision. In the event that the design, upon which the alternate lump sum bid, is not ultimately accepted by the Department, the Design-Build Team will be required to design and construct a bridge that does satisfy the Department that all contract and permit conditions (including FEMA) can and will be met, which may include the design and construction of the bridge specified in the Structures Scope of Work for that site. Culverts will not be acceptable in lieu of bridges.

The Design-Build Team is cautioned that the bridge description specified in the Structures Scope of Work was determined jointly by the Department and the regulatory and permitting agencies and variation therefrom will likely require subsequent concurrence from these agencies. The Design-Build Team is fully responsible for engaging the Department to understand the rationale for the bridge descriptions outlined in the Structures Scope of Work prior to exercising the lump sum bid alternate afforded by this provision.

To elect this option, the Design-Build Team shall enter a lump sum amount for all work required by the contract for the applicable bridge site on the Itemized Proposal Sheet. The unit cost and

amount for all other line items specific to that bridge shall be left blank on the Itemized Proposal Sheet.
To forego this option, the Design-Build Team shall enter a unit cost and amount for each of the specific unit price and lump sum items for the applicable bridge site and the amount for the Alternate Lump Sum Bid for Bridge #_____ shall be left blank.

Payment will be made under:

Pay Item	**Pay Unit**
Alternate Lump Sum Bid for Bridge #_____	Lump Sum

MOBILIZATION
(9-1-11) DB1 G15A (Rev.)

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Page 8-1, Subarticle 800-2, MEASUREMENT AND PAYMENT

Delete this subarticle in its entirety and replace with the following:

800-2 MEASUREMENT AND PAYMENT

Five percent of the "Total Amount of Bid for Entire Project" will be allowed to be included as the lump sum amount for Mobilization. Partial payments for Mobilization will be made beginning with the first partial pay estimate paid on the contract. The initial payment will be made at the rate of 40 percent of the lump sum amount calculated for Mobilization. The remaining 60 percent will be paid in three equal payments with the partial pay estimate following start of construction for each of the first three bridge sites.

SEQUENCE AND SCHEDULE RESTRICTIONS

Bridge Nos. 770026 and 770223 are first priority and shall be constructed first in the contract to the extent possible considering third party constraints. The Design-Build Team's design and construction schedule may dictate which of the two will be replaced first. Bridge Nos. 770432 and 770433 are second priority in the contract. Bridge Nos. 770413 and 770414 are to be constructed last in the contract.

At Bridge No. 770433, no work will be allowed on Sundays or during funerals due to the proximity of United Pentecostal Church of Rowland.

SUBMITTAL OF QUANTITIES, FUEL BASE INDEX PRICE AND OPT-OUT OPTION
(1/23/14) EDB EDB1 G43

(A) **Submittal of Quantities**

Submit quantities on the *Fuel Usage Factor Chart and Estimate of Quantities* sheet that is located in the electronic bidding file.

The Design-Build Team shall prepare an Estimate of Quantities that they anticipate incorporating into the completed project and upon which the Price Proposal was based. The quantity breakdown shall include all items of work that appear in the *Fuel Usage Factor Chart and Estimate of Quantities* sheet. Only those items of work which are specifically noted in the Fuel Usage Factor Chart will be subject to fuel price adjustments. Fuel price adjustments will not apply to changes in these quantities resulting from a supplemental agreement.

(B) **Base Index Price**

The Design-Build Team's Estimate of Quantities will be used on the various partial payment estimates to determine fuel price adjustments. The Design-Build Team shall submit a payment request for quantities of work completed based on the work completed for that estimate period. The quantities requested for partial payment shall be reflective of the work actually accomplished for the specified period. The Design-Build Team shall certify that the quantities are reasonable for the specified period. The base index price for DIESEL #2 FUEL is **$_1.5601_** per gallon.

(C) **Opt Out of Fuel Price Adjustment**

If the Design-Build Team elects not to pursue reimbursement for Fuel Price Adjustments, a quantity of zero shall be entered for all quantities in the *Fuel Usage Factor Chart and Estimate of Quantities* and the declination box shall be checked. Failure to complete this form will mean that the Design-Build Team is declining the Fuel Price Adjustments for this project.

(D) **Change Option**

The proposer will not be permitted to change the option after the time of Price Proposal opening.

CONFIDENTIAL QUESTIONS

(1-5-07) EDB EDB G56

The Design-Build Team will be permitted to ask confidential questions of the Department, which neither the question nor answer will be shared with other proposing teams. For the purpose of this provision, "confidential question" is defined as a private inquiry containing information whose disclosure could alert others to certain details of doing business in a particular manner. The Department will determine if the question is considered a confidential question.

I. Confidential questions arising prior to issuance of the Final Request for Proposals will be allowed at the Industry Review Draft RFP review with the individual teams.

   The Department will answer the confidential question verbally at the meeting if possible. If not answered verbally during the meeting, the Department will answer the confidential question by subtle changes in the Final Request for Proposals, which will clarify the scope by either allowing or disallowing the request. The revision will be made in such a manner as to not disclose the confidential question.

II. After the issuance of the Final Request for Proposals, confidential questions may be asked by requesting a meeting with the Contract Officer. The request shall be in writing and provide sufficient detail to evaluate the magnitude of the request. Questions shall be of such magnitude as to warrant a special meeting. Minor questions will not be acknowledged or answered.

After evaluation, the Contract Officer will respond to the question in writing to the Design-Build Team only. Other teams will not be notified of the question or answer.

VALUE ANALYSIS

(9-1-11) EDB1 G57

This "Value Analysis" Project Special Provision does not apply to bridges for which the Design-Build Team has elected to forego the unit price bid approach and instead has elected to submit an alternate lump sum bid for the design and construction of a bridge. Reference the "Alternate Lump Sum Bid" Project Special Provision.

Value Engineering Proposals, as specified in Article 104-12 of the 2012 *Standard Specifications for Roads and Structures*, and as modified in the Standard Special Provision entitled "Value Engineering Proposals" will be accepted. Only proposals, which alter the requirements of the RFP issued by the Department, will be considered as Value Engineering Proposals.

To minimize re-design efforts and costs, the Design-Build Team is encouraged to submit Preliminary Value Engineering Proposals that provide an estimate of cost or time savings, span layout, span lengths, foundation types, or other such general information and how they differ from that specified in this RFP. Therefore, full design packages for the proposed structure and that for the structure specified in this RFP are not required, but enough detail should be provided to clearly show the cost of both options (excluding design cost).

The $10,000 threshold for consideration of a Value Engineering Proposal, as specified in Article 104-12 applies; however, this threshold will be satisfied if a Value Engineering Proposal similarly affects multiple bridges, resulting in a cumulative savings of more than $10,000 across those multiple bridges.

Value Engineering Proposals will not be required or allowed for the sole purposes of reducing the depth of foundations or to shorten the bridge length unless a change to the foundation type (drilled piers versus piles) or a change to the superstructure type is proposed and accepted. Instead, such reduction in foundation depth or bridge length will result in an adjustment in partial payments to the Design-Build Team in accordance with the Project Special Provision entitled "Measurement and Payment." However, as an incentive to the Design-Build Team to provide an economical structural design, the Design-Build Team will be paid a lump sum of 15% of the total partial payment adjustment attributable to the reduced pay item quantities for Foundation Depth and/or Bridge Length, as applicable. Said lump sum payment will be made upon approval of all design submittals, and receipt of all permits and FEMA compliance for a given bridge site. The 15% incentive will not apply to a bridge if the total partial payment adjustments noted above for that bridge are less than $5,000.00.

SCHEDULE OF ESTIMATED COMPLETION PROGRESS

(9-1-11) (Rev. 3/19/14) DB1 G58

The Design-Build Team's attention is directed to the Standard Special Provision entitled "Availability of Funds - Termination of Contracts" included elsewhere in this RFP. The Department of Transportation's schedule of estimated completion progress for this project as required by that Standard Special Provision is as follows:

Fiscal Year	Progress (% of Dollar Value)
2017 (07/01/16 – 06/30/17)	8% of Total Amount Bid
2018 (07/01/17 – 06/30/18)	39% of Total Amount Bid
2019 (07/01/18 – 06/30/19)	34% of Total Amount Bid
2020 (07/01/19 – 06/30/20)	19% of Total Amount Bid

The Design-Build Team shall also furnish its own progress schedule in accordance with Article 108-2 of the 2012 *Standard Specifications for Roads and Structures*. Any acceleration of the progress as shown by the Design-Build Team's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

MINORITY BUSINESS ENTERPRISE AND WOMEN BUSINESS ENTERPRISE

(10-16-07)(Rev. 5-25-16) EDB1 G066

Description

The purpose of this Special Provision is to carry out the North Carolina Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts financed in whole or in part with State funds.

Definitions

Additional MBE/WBE Subcontractors - Any MBE/WBE submitted at the time of bid that will not be used to meet either the MBE or WBE goal. No submittal of a Letter of Intent is required, unless the additional participation is used for banking purposes.

Committed MBE/WBE Subcontractor - Any MBE/WBE submitted at the time of bid that is being used to meet either the MBE or WBE goal by submission of a Letter of Intent. Or any MBE or WBE used as a replacement for a previously committed MBE or WBE firm.

Contract Goals Requirement - The approved MBE and WBE participation at time of award, but not greater than the advertised contract goals for each.

Goal Confirmation Letter - Written documentation from the Department to the Proposer confirming the Design-Build Team's approved, committed MBE and WBE participation along with a listing of the committed MBE and WBE firms.

Manufacturer - A firm that operates or maintains a factory or establishment that produces on the premises, the materials or supplies obtained by the Design-Build Team.

MBE Goal - A portion of the total contract, expressed as a percentage, that is to be performed by committed MBE subcontractor(s).

Minority Business Enterprise (MBE) - A firm certified as a Disadvantaged Minority-Owned Business Enterprise through the North Carolina Unified Certification Program.

Regular Dealer - A firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold to the public in the usual course of business. A regular dealer engages in, as its principal business and in its own name, the purchase and sale or lease of the products in question. A regular dealer in such bulk items as steel, cement, gravel, stone, and petroleum products need not keep such products in stock, if it owns and operates distribution equipment for the products. Brokers and packagers are not regarded as manufacturers or regular dealers within the meaning of this section.

North Carolina Unified Certification Program (NCUCP) - A program that provides comprehensive services and information to applicants for MBE/WBE certification. The MBE/WBE program follows the same regulations as the federal Disadvantaged Business Enterprise (DBE) program in accordance with 49 CFR Part 26.

United States Department of Transportation (USDOT) - Federal agency responsible for issuing regulations (49 CFR Part 26) and official guidance for the DBE program.

WBE Goal - A portion of the total contract, expressed as a percentage, that is to be performed by committed WBE subcontractor(s).

Women Business Enterprise (WBE) - A firm certified as a Disadvantaged Women-Owned Business Enterprise through the North Carolina Unified Certification Program.

Forms and Websites Referenced in this Provision

Payment Tracking System - On-line system in which the Design-Build Team enters the payments made to MBE and WBE subcontractors who have performed work on the project.

https://apps.dot.state.nc.us/Vendor/PaymentTracking/

DBE-IS *Subcontractor Payment Information* - Form for reporting the payments made to all MBE/WBE firms working on the project.

http://www.ncdot.org/doh/forms/files/DBE-IS.xls

RF-1 *MBE/WBE Replacement Request Form* - Form for replacing a committed MBE or WBE.

http://connect.ncdot.gov/projects/construction/Construction%20Forms/DBE%20MBE%20WBE%20Replacement%20Request%20Form.pdf

SAF *Subcontract Approval Form* - Form required for approval to sublet the contract.

http://connect.ncdot.gov/projects/construction/Construction%20Forms/Subcontract%20Approval%20Form%20Rev.%202012.zip

JC-1 *Joint Check Notification Form* - Form and procedures for joint check notification. The form acts as a written joint check agreement among the parties providing full and prompt disclosure of the expected use of joint checks.

http://connect.ncdot.gov/projects/construction/Construction%20Forms/Joint%20Check%20Notification%20Form.pdf

Letter of Intent - Form signed by the Contractor and the MBE/WBE subcontractor, manufacturer or regular dealer that affirms that a portion of said contract is going to be performed by the signed MBE/WBE for the amount listed at the time of bid.

http://connect.ncdot.gov/letting/LetCentral/Letter%20of%20Intent%20to%20Perform%20as%20a%20Subcontractor.pdf

Subcontractor Quote Comparison Sheet - Spreadsheet for showing all subcontractor quotes in the work areas where MBEs and WBEs quoted on the project. This sheet is submitted with good faith effort packages.

http://connect.ncdot.gov/business/SmallBusiness/Documents/DBE%20Subcontractor%20Quote%20Comparison%20Example.xls

MBE and WBE Goal

The following goals for participation by Minority Business Enterprises and Women Business Enterprises are established for this contract:

(A) Minority Business Enterprises **4.0 %**

(1) *If the MBE goal is more than zero*, the Design-Build Team shall exercise all necessary and reasonable steps to ensure that MBEs participate in at least the percent of the contract as set forth above as the MBE goal.

(2) *If the MBE goal is zero*, the Design-Build Team shall make an effort to recruit and use MBEs during the *performance* of the contract. Any MBE participation obtained shall be reported to the Department.

(B) Women Business Enterprises **5.0 %**

(1) *If the WBE goal is more than zero*, the Design-Build Team shall exercise all necessary and reasonable steps to ensure that WBEs participate in at least the percent of the contract as set forth above as the WBE goal.

(2) *If the WBE goal is zero*, the Design-Build Team shall make an effort to recruit and use WBEs during the performance of the contract. Any WBE participation obtained shall be reported to the Department.

This goal is to be met through utilization of highway construction contractors and/or right-of-way acquisition firms. Utilization of MBE/WBE firms performing design, other preconstruction services, or Construction Engineering and Inspection are not included in this goal.

Directory of Transportation Firms (Directory)

Real-time information is available about firms doing business with the Department and firms that are certified through NCUCP in the Directory of Transportation Firms. Only firms identified in the Directory as MBE and WBE certified shall be used to meet the MBE and WBE goals respectively. The Directory can be found at the following link:

https://partner.ncdot.gov/VendorDirectory/default.html

The listing of an individual firm in the directory shall not be construed as an endorsement of the firm's capability to perform certain work.

Listing of MBE/WBE Subcontractors

At the time of bid, Proposers shall submit all MBE and WBE participation that they anticipate to use during the life of the contract. Only those identified to meet the MBE goal and the WBE goal will be considered committed, even though the listing shall include both committed MBE/WBE subcontractors and additional MBE/WBE subcontractors. Any additional MBE/WBE subcontractor participation above the goal for which letters of intent are received will follow the banking guidelines found elsewhere in this provision. All other additional MBE/WBE subcontractor participation submitted at the time of bid will be used toward the Department's overall race-neutral goals. Only those firms with current MBE and WBE certification at the time of Price Proposal opening will be acceptable for listing in the Proposer's submittal of MBE and WBE participation. The Design-Build Team shall indicate the following required information:

(A) Electronic Bids

Proposers shall submit a listing of MBE and WBE participation in the appropriate section of Expedite, the bidding software of Bid Express®.

(1) Submit the names and addresses of MBE and WBE firms identified to participate in the contract. If the Proposer uses the updated listing of MBE and WBE firms shown in Expedite, the Proposer may use the dropdown menu to access the name and address of the MBE and WBE firms.

(2) Submit the contract line numbers of work to be performed by each MBE and WBE firm. When no figures or firms are entered, the Proposer will be considered to have no MBE and WBE participation.

(3) The Proposer shall be responsible for ensuring that the MBE and WBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the price proposal opening, that MBE's and WBE's participation will not count towards achieving either the MBE and WBE goal.

MBE or WBE Prime Contractor

When a certified MBE or WBE firm proposes on a contract that contains MBE and WBE goals, the firm is responsible for meeting the goals or making good faith efforts to meet the goals, just like any other proposer. In most cases, a MBE or WBE proposer on a contract will meet one of the goals by virtue of the work it performs on the contract with its own forces. However, all the work that is performed by the MBE or WBE proposer and any other similarly certified subcontractors will count toward the goal. The MBE or WBE proposer shall list itself along with any MBE or WBE subcontractors, if any, in order to receive credit toward the goals.

For example, on a proposed contract, the WBE goal is 10%, and the MBE goal is 8%. A WBE proposer puts in a bid where they will perform 40% of the contract work and have a WBE subcontractor which will perform another 5% of the work. Together the two WBE firms submit on the *Listing of MBE and WBE Subcontractors* a value of 45% of the contract which fulfills the WBE goal. The 8% MBE goal shall be obtained through MBE participation with MBE certified subcontractors or documented through a good faith effort. It should be noted that you cannot combine the two goals to meet an overall value. The two goals shall remain separate.

MBE/WBE prime contractors shall also follow Sections A and B listed under *Listing of MBE and WBE Subcontractor* just as a non-MBE/WBE proposer would.

Written Documentation – Letter of Intent

The Proposer shall submit written documentation for each MBE/WBE that will be used to meet the MBE and WBE goals of the contract, indicating the Proposer's commitment to use the MBE/WBE in the contract. This documentation shall be submitted on the Department's form titled *Letter of Intent*.

The documentation shall be received in the office of the State Contractor Utilization Engineer or at DBE@ncdot.gov no later than 12:00 noon of the sixth calendar day following opening of Price Proposals unless the sixth day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 12:00 noon on the next official state business day.

If the Proposer fails to submit the Letter of Intent from each committed MBE and WBE to be used toward the MBE and WBE goals, or if the form is incomplete (i.e. both signatures are not present), the MBE/WBE participation will not count toward meeting the MBE/WBE goal. If the lack of this participation drops the commitment below either the MBE or WBE goal, the Design-Build Team shall submit evidence of good faith efforts for the goal not met, completed in its entirety, to the State Contractor Utilization Engineer or DBE@ncdot.gov no later than 12:00 noon on the eighth calendar day following opening of Price Proposals, unless the eighth

day falls on an official state holiday. In that situation, it is due in the office of the State Contractor Utilization Engineer no later than 12:00 noon on the next official state business day.

Submission of Good Faith Effort

If the Proposer fails to meet or exceed either the MBE or the WBE goal, the apparent lowest responsive Proposer shall submit to the Department documentation of adequate good faith efforts made to reach that specific goal(s).

A hard copy and an electronic copy of this information shall be received in the office of the State Contractor Utilization Engineer or at DBE@ncdot.gov no later than 12:00 noon of the sixth calendar day following opening of Price Proposals unless the sixth day falls on an official state holiday. In that situation, it would be due in the office of the State Contractor Utilization Engineer the next official state business day. If the Design-Build Team cannot send the information electronically, then one complete set and 9 copies of this information shall be received under the same time constraints above.

Note: Where the information submitted includes repetitious solicitation letters, it will be acceptable to submit a representative letter along with a distribution list of the firms that were solicited. Documentation of MBE/WBE quotations shall be a part of the good faith effort submittal. This documentation may include written subcontractor quotations, telephone log notations of verbal quotations, or other types of quotation documentation.

Consideration of Good Faith Effort for Projects with MBE/WBE Goals More Than Zero

Adequate good faith efforts mean that the Proposer took all necessary and reasonable steps to achieve the goal which, by their scope, intensity, and appropriateness, could reasonably be expected to obtain sufficient MBE/WBE participation. Adequate good faith efforts also mean that the Proposer actively and aggressively sought MBE/WBE participation. Mere *pro forma* efforts are not considered good faith efforts.

The Department will consider the quality, quantity, and intensity of the different kinds of efforts a Proposer has made. Listed below are examples of the types of actions a Proposer will take in making a good faith effort to meet the goals and are not intended to be exclusive or exhaustive, nor is it intended to be a mandatory checklist.

(A) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising, written notices, use of verifiable electronic means through the use of the NCDOT Directory of Transportation Firms) the interest of all certified MBEs/WBEs that are also prequalified subcontractors. The Proposer must solicit this interest within at least 10 days prior to the opening of the Price Proposals to allow the MBEs/WBEs to respond to the solicitation. Solicitation shall provide the opportunity to MBEs/WBEs within the Division and surrounding Divisions where the project is located. The Proposer must determine with certainty if the MBEs/WBEs are interested by taking appropriate steps to follow up initial solicitations.

(B) Selecting portions of the work to be performed by MBEs/WBEs in order to increase the likelihood that the MBE and WBE goals will be achieved.

(1) Where appropriate, break out contract work items into economically feasible units to facilitate MBE / WBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.

(2) Negotiate with subcontractors to assume part of the responsibility to meet the contract MBE/WBE goals when the work to be sublet includes potential for MBE/WBE participation (2nd and 3rd tier subcontractors).

(C) Providing interested certified MBEs/WBEs that are also prequalified subcontractors with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(D) (1) Negotiating in good faith with interested MBEs/WBEs. It is the Proposer's responsibility to make a portion of the work available to MBE/WBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available MBE/WBE subcontractors and suppliers, so as to facilitate MBE/WBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of MBEs/WBEs that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for MBEs/WBEs to perform the work.

(2) A Proposer using good business judgment would consider a number of factors in negotiating with subcontractors, including MBE/WBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using MBEs/WBEs is not in itself sufficient reason for a proposer's failure to meet the contract MBE or WBE goals, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the Proposer of the responsibility to make good faith efforts. Proposing Design-Build Teams are not, however, required to accept higher quotes from MBEs/WBEs if the price difference is excessive or unreasonable.

(E) Not rejecting MBEs/WBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The Proposer's standing within its industry, membership in specific groups, organizations, or associates and political or social affiliations (for example, union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of Price Proposals in the Proposer's efforts to meet the project goal.

(F) Making efforts to assist interested MBEs/WBEs in obtaining bonding, lines of credit, or insurance as required by the recipient or Proposer.

(G) Making efforts to assist interested MBEs/WBEs in obtaining necessary equipment, supplies, materials, or related assistance or services.

(H) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; Federal, State, and local minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of MBEs/WBEs. Contact within 7 days from the opening of the Price Proposals the Business Development Manager in the Business Opportunity and Work Force Development Unit to give notification of the Proposer's inability to get MBE or WBE quotes.

(I) Any other evidence that the Proposer submits which shows that the Proposer has made reasonable good faith efforts to meet the MBE and WBE goal.

In addition, the Department may take into account the following:

(1) Whether the Proposer's documentation reflects a clear and realistic plan for achieving the MBE and WBE goals.

(2) The Proposers' past performance in meeting the MBE and WBE goals.

(3) The performance of other proposers in meeting the MBE and WBE goals. For example, when the apparent lowest responsible Proposer fails to meet the goals, but others meet it, you may reasonably raise the question of whether, with additional reasonable efforts the lowest responsible Proposer could have met the goals. If the lowest responsible Proposer fails to meet the MBE and WBE goals, but meets or exceeds the average MBE and WBE participation obtained by other proposers, the Department may view this, in conjunction with other factors, as evidence of the lowest responsible Proposer having made a good faith effort.

If the Department does not award the contract to the lowest responsible Proposer, the Department reserves the right to award the contract to the next lowest responsible Proposer that can satisfy to the Department that the MBE and WBE goals can be met or that an adequate good faith effort has been made to meet the MBE and WBE goals.

Non-Good Faith Appeal

The State Contractual Services Engineer will notify the Design-Build Team verbally and in writing of non-good faith. A Design-Build Team may appeal a determination of non-good faith made by the Goal Compliance Committee. If a Design-Build Team wishes to appeal the determination made by the Committee, they shall provide written notification to the State Contractual Services Engineer or at DBE@ncdot.gov. The appeal shall be made within 2 business days of notification of the determination of non-good faith.

Counting MBE/WBE Participation Toward Meeting MBE/WBE Goals

(A) Participation

The total dollar value of the participation by a committed MBE/WBE will be counted toward the contract goal requirements. The total dollar value of participation by a committed MBE/WBE will be based upon the value of work actually performed by the MBE/WBE and the actual payments to MBE/WBE firms by the Design-Build Team.

(B) Joint Checks

Prior notification of joint check use shall be required when counting MBE/WBE participation for services or purchases that involves the use of a joint check. Notification shall be through submission of Form JC-1 *(Joint Check Notification Form)* and the use of joint checks shall be in accordance with the Department's Joint Check Procedures.

(C) Subcontracts (Non-Trucking)

A MBE/WBE may enter into subcontracts. Work that a MBE subcontracts to another MBE firm may be counted toward the MBE contract goal requirement. The same holds for work that a WBE subcontracts to another WBE firm. Work that a MBE subcontracts to a non-MBE firm does <u>not</u> count toward the MBE contract goal requirement. Again, the same holds true for the work that a WBE subcontracts to a non-WBE firm. If a MBE or WBE contractor or subcontractor subcontracts a significantly greater portion of the work of the contract than would be expected on the basis of standard industry practices, it shall be presumed that the MBE or WBE is not performing a commercially useful function. The MBE/WBE may present evidence to rebut this presumption to the Department. The Department's decision on the rebuttal of this presumption may be subject to review by the Office of Inspector General, NCDOT.

(D) Joint Venture

When a MBE or WBE performs as a participant in a joint venture, the Design-Build Team may count toward its contract goal requirement a portion of the total value of participation with the MBE or WBE in the joint venture, that portion of the total dollar value being a distinct clearly defined portion of work that the MBE or WBE performs with its forces.

(E) Suppliers

A Design-Build Team may count toward its MBE or WBE requirement 60 percent of its expenditures for materials and supplies required to complete the contract and obtained from a MBE or WBE regular dealer and 100 percent of such expenditures from a MBE or WBE manufacturer.

(F) Manufacturers and Regular Dealers

A Design-Build Team may count toward its MBE or WBE requirement the following expenditures to MBE/WBE firms that are not manufacturers or regular dealers:

(1) The fees or commissions charged by a MBE/WBE firm for providing a *bona fide* service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a DOT-assisted contract, provided the fees or commissions are determined to be reasonable and not excessive as compared with fees and commissions customarily allowed for similar services.

(2) With respect to materials or supplies purchased from a MBE/WBE, which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site (but not the cost of the materials and supplies themselves), provided the fees are determined to be reasonable and not excessive as compared with fees customarily allowed for similar services.

Commercially Useful Function

(A) MBE/WBE Utilization

The Design-Build Team may count toward its contract goal requirement only expenditures to MBEs and WBEs that perform a commercially useful function in the work of a contract. A MBE/WBE performs a commercially useful function when it is responsible for execution of the work of the contract and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. To perform a commercially useful function, the MBE/WBE shall also be responsible with respect to materials and supplies used on the contract, for negotiating price, determining quality and quantity, ordering the material and installing (where applicable) and paying for the material itself. To determine whether a MBE/WBE is performing a commercially useful function, the Department will evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing and the MBE/WBE credit claimed for its performance of the work, and any other relevant factors.

(B) MBE/WBE Utilization in Trucking

The following factors will be used to determine if a MBE or WBE trucking firm is performing a commercially useful function.

(1) The MBE/WBE shall be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there shall not be a contrived arrangement for the purpose of meeting the MBE or WBE goal.

(2) The MBE/WBE shall itself own and operate at least one fully licensed, insured, and operational truck used on the contract.

(3) The MBE/WBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs.

(4) The MBE may subcontract the work to another MBE firm, including an owner-operator who is certified as a MBE. The same holds true that a WBE may subcontract the work to another WBE firm, including an owner-operator who is certified as a WBE. When this occurs, the MBE or WBE who subcontracts work receives credit for the total value of the transportation services the subcontracted MBE or WBE provides on the contract. It should be noted that every effort shall be made by MBE and WBE contractors to subcontract to the same certification (i.e., MBEs to MBEs and WBEs to WBEs), in order to fulfill the goal requirement. This, however, may not always be possible due to the limitation of firms in the area. If the MBE or WBE firm shows a good faith effort has been made to reach out to similarly certified transportation service providers and there is no interest or availability, and they can get assistance from other certified providers, the Engineer will not hold the prime liable for meeting the goal.

(5) The MBE/WBE may also subcontract the work to a non-MBE/WBE firm, including from an owner-operator. The MBE/WBE who subcontracts the work to a non-MBE/WBE is entitled to credit for the total value of transportation services provided by the non-MBE/WBE subcontractor not to exceed the value of transportation services provided by MBE/WBE-owned trucks on the contract. Additional participation by non-MBE/WBE subcontractors receives credit only for the fee or commission it receives as a result of the subcontract arrangement. The value of services performed under subcontract agreements between the MBE/WBE and the Design-Build Team will not count towards the MBE/WBE contract requirement.

(6) A MBE/WBE may lease truck(s) from an established equipment leasing business open to the general public. The lease must indicate that the MBE/WBE has exclusive use of and control over the truck. This requirement does not preclude the leased truck from working for others during the term of the lease with the consent of the MBE/WBE, so long as the lease gives the MBE/WBE absolute priority for use of the leased truck. This type of lease may count toward the MBE/WBE's credit as long as the driver is under the MBE/WBE's payroll.

(7) Subcontracted/leased trucks shall display clearly on the dashboard the name of the MBE/WBE that they are subcontracted/leased to and their own company name if it is not identified on the truck itself. Magnetic door signs are not permitted.

Banking MBE/WBE Credit

If the Price Proposal of the lowest responsible Proposer exceeds $500,000 and if the committed MBE/WBE participation submitted by Letter of Intent exceeds the algebraic sum of the MBE or WBE goal by $1,000 or more, the excess will be placed on deposit by the Department for future use by the Proposer. Separate accounts will be maintained for MBE and WBE participation and these may accumulate for a period not to exceed 24 months.

When the lowest responsible Proposer fails to submit sufficient participation by MBE firms to meet the contract goal, as part of the good faith effort, the Department will consider allowing the Proposer to withdraw funds to meet the MBE goal as long as there are adequate funds available from the Proposer's MBE bank account.

When the lowest responsible Proposer fails to submit sufficient participation by WBE firms to meet the contract goal, as part of the good faith effort, the Department will consider allowing the Proposer to withdraw funds to meet the WBE goal as long as there are adequate funds available from the Proposer's WBE bank account.

MBE/WBE Replacement

When a Design-Build Team has relied on a commitment to a MBE or WBE firm (or an approved substitute MBE or WBE firm) to meet all or part of a contract goal requirement, the Design-Build Team shall not terminate the MBE/WBE for convenience. This includes, but is not limited to, instances in which the Design-Build Team seeks to perform the work of the terminated subcontractor with another MBE/WBE subcontractor, a non-MBE/WBE subcontractor, or with the Design-Build Team's own forces or those of an affiliate. A MBE/WBE may only be terminated after receiving the Engineer's written approval based upon a finding of good cause for the termination. The Prime Contractor or other affiliated companies within the Design-Build Team must give the MBE / WBE firm five (5) calendar days to respond to the prime contractor's notice of termination and advise the prime contractor and the Department of the reasons, if any, why the firm objects to the proposed termination of its subcontract and why the Department should not approve the action.

All requests for replacement of a committed MBE/WBE firm shall be submitted to the Engineer for approval on Form RF-1 *(Replacement Request).* If the Design-Build Team fails to follow this procedure, the Prime Contractor or other affiliated companies within the Design-Build Team may be disqualified from further bidding for a period of up to 6 months.

The Design-Build Team shall comply with the following for replacement of a committed MBE/WBE:

(A) Performance Related Replacement

When a committed MBE is terminated for good cause as stated above, an additional MBE that was submitted at the time of bid may be used to fulfill the MBE commitment. The same holds true if a committed WBE is terminated for good cause, an additional WBE that was submitted at the time of bid may be used to fulfill the WBE goal. A good

faith effort will only be required for removing a committed MBE/WBE if there were no additional MBEs/WBEs submitted at the time of bid to cover the same amount of work as the MBE/WBE that was terminated.

If a replacement MBE/WBE is not found that can perform at least the same amount of work as the terminated MBE/WBE, the Design-Build Team shall submit a good faith effort documenting the steps taken. Such documentation shall include, but not be limited to, the following:

(1) Copies of written notification to MBEs/WBEs that their interest is solicited in contracting the work defaulted by the previous MBE/WBE or in subcontracting other items of work in the contract.

(2) Efforts to negotiate with MBEs/WBEs for specific subbids including, at a minimum:

(a) The names, addresses, and telephone numbers of MBEs/WBEs who were contacted.

(b) A description of the information provided to MBEs/WBEs regarding the plans and specifications for portions of the work to be performed.

(3) A list of reasons why MBE/WBE quotes were not accepted.

(4) Efforts made to assist the MBEs/WBEs contacted, if needed, in obtaining bonding or insurance required by the Design-Build Team.

(B) Decertification Replacement

(1) When a committed MBE/WBE is decertified by the Department after the SAF (*Subcontract Approval Form*) has been received by the Department, the Department will not require the Design-Build Team to solicit replacement MBE/WBE participation equal to the remaining work to be performed by the decertified firm. The participation equal to the remaining work performed by the decertified firm will count toward the contract goal requirement.

(2) When a committed MBE/WBE is decertified prior to the Department receiving the SAF (*Subcontract Approval Form*) for the named MBE/WBE firm, the Design-Build Team shall take all necessary and reasonable steps to replace the MBE/WBE subcontractor with another similarly certified MBE/WBE subcontractor to perform at least the same amount of work to meet the MBE/WBE goal requirement. If a MBE/WBE firm is not found to do the same amount of work, a good faith effort must be submitted to NCDOT (see A herein for required documentation).

Changes in the Work

When the Engineer makes changes that result in the reduction or elimination of work to be performed by a committed MBE/WBE, the Design-Build Team will not be required to seek additional participation. When the Engineer makes changes that result in additional work to be performed by a MBE/WBE based upon the Design-Build Team's commitment, the MBE/WBE shall participate in additional work to the same extent as the MBE/WBE participated in the original contract work.

When the Engineer makes changes that result in extra work, which has more than a minimal impact on the contract amount, the Design-Build Team shall seek additional participation by MBEs/WBEs unless otherwise approved by the Engineer.
When the Engineer makes changes that result in an alteration of plans or details of construction, and a portion or all of the work had been expected to be performed by a committed MBE/WBE, the Design-Build Team shall seek participation by MBEs/WBEs unless otherwise approved by the Engineer.

When the Design-Build Team requests changes in the work that result in the reduction or elimination of work that the Design-Build Team committed to be performed by a MBE/WBE, the Design-Build Team shall seek additional participation by MBEs/WBEs equal to the reduced MBE/WBE participation caused by the changes.

Reports and Documentation

A SAF (*Subcontract Approval Form*) shall be submitted for all work which is to be performed by a MBE/WBE subcontractor. The Department reserves the right to require copies of actual subcontract agreements involving MBE/WBE subcontractors.

When using transportation services to meet the contract commitment, the Design-Build Team shall submit a proposed trucking plan in addition to the SAF. The plan shall be submitted prior to beginning construction on the project. The plan shall include the names of all trucking firms proposed for use, their certification type(s), the number of trucks owned by the firm, as well as the individual truck identification numbers, and the line item(s) being performed.

Within 30 calendar days of entering into an agreement with a MBE/WBE for materials, supplies or services, not otherwise documented by the SAF as specified above, the Design-Build Team shall furnish the Engineer a copy of the agreement. The documentation shall also indicate the percentage (60% or 100%) of expenditures claimed for MBE/WBE credit.

Reporting Minority and Women Business Enterprise Participation

The Design-Build Team shall provide the Engineer with an accounting of payments made to all MBE and WBE firms, including material suppliers and contractors at all levels (prime, subcontractor, or second tier subcontractor). This accounting shall be furnished to the Engineer for any given month by the end of the following month. Failure to submit this information accordingly may result in the following action:

(A) Withholding of money due in the next partial pay estimate; or

(B) Removal of an approved Prime Contractor or other affiliated companies within the Design-Build Team from the prequalified bidders' list or the removal of other entities from the approved subcontractors list.

While each contractor (prime, subcontractor, 2nd tier subcontractor) is responsible for accurate accounting of payments to MBEs/WBEs, it shall be the prime contractor's responsibility to report all monthly and final payment information in the correct reporting manner.

Failure on the part of the Design-Build Team to submit the required information in the time frame specified may result in the disqualification of that Prime Contractor and any affiliate companies within the Design-Build Team from further bidding until the required information is submitted.

Failure on the part of any subcontractor to submit the required information in the time frame specified may result in the disqualification of that Prime Contractor and any affiliate companies within the Design-Build Team from being approved for work on future DOT projects until the required information is submitted.

Design-Build Teams reporting transportation services provided by non-MBE/WBE lessees shall evaluate the value of services provided during the month of the reporting period only.

At any time, the Engineer can request written verification of subcontractor payments.

The Design-Build Team shall report the accounting of payments through the Department's Payment Tracking System.

Failure to Meet Contract Requirements

Failure to meet contract requirements in accordance with Subarticle 102-15(J) of the *2012 Standard Specifications* may be cause to disqualify the Prime Contractor or any other affiliated companies within the Design-Build Team from further bidding for a specified length of time.

RESOURCE CONSERVATION AND ENVIRONMENTALLY SUSTAINABLE PRACTICES

(3/27/13) (Rev. 4-16-15) 104-13 DB1 G118

In accordance with North Carolina Executive Order 156, NCGS 130A-309.14(3), and NCGS 136-28.8, it is the objective of the Department to aid in the reduction of materials that become a part of our solid waste stream, to divert materials from landfills, to find ways to recycle and reuse materials, to consider and minimize, where economically feasible, the environmental impacts associated with agency land use and acquisition, construction, maintenance and facility management for the benefit of the Citizens of North Carolina.

To achieve the mission of reducing environmental impacts across the state, the Department is committed to supporting the efforts to initiate, develop and use products and construction

methods that incorporate the use of recycled, solid waste products and environmentally sustainable practices in accordance with Article 104-13 of the 2012 *Standard Specifications for Roads and Structures*.

Report the quantities of reused or recycled materials either incorporated in the project or diverted from landfills and any practice that minimizes the environmental impact on the project annually on the Project Construction Reuse and Recycling Reporting Form. The Project Construction Reuse and Recycling Reporting Form and a location tool for local recycling facilities are available at:

http://connect.ncdot.gov/resources/Environmental/Pages/North-Carolina-Recycling-Locations.aspx.

Submit the Project Construction Reuse and Recycling Reporting Form by August 1st annually to valuemanagementunit@ncdot.gov. For questions regarding the form or reporting, please contact the State Value Management Engineer at 919-707-4810.

SUBSURFACE INFORMATION

(3-22-07) DB1 G119

Available subsurface information will be provided on this project. The Design-Build Team shall be responsible for additional investigations and for verifying the accuracy of the subsurface information supplied by the Department.

DOMESTIC STEEL

(3-6-13) 106 DB G 120

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

P**age 1-49, Subarticle 106-1(B) Domestic Steel, lines 2-7,** replace the first paragraph with the following:

All steel and iron products that are permanently incorporated into this project shall be produced in the United States except minimal amounts of foreign steel and iron products may be used provided the combined material cost of the items involved does not exceed 0.1% of the total amount bid for the entire project or $2,500, whichever is greater, and that the contractor can provide invoices documenting the cost of the items. This minimal amount of foreign produced steel and iron products permitted for use is not applicable to high strength fasteners. Domestically produced high strength fasteners are required.

TWELVE MONTH GUARANTEE

(7-15-03) DB1 G145

(A) The Design-Build Team shall guarantee materials and workmanship against latent and patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve months following the date of final acceptance of the work at each bridge site for maintenance and shall replace such defective materials and workmanship without cost to the Department. The Design-Build Team will not be responsible for damage due

to normal wear and tear, for negligence on the part of the Department, and/or for use in excess of the design.

(B) Where items of equipment or material carry a manufacturer's guarantee for any period in excess of twelve months, then the manufacturer's guarantee shall apply for that particular piece of equipment or material. The Department's first remedy shall be through the manufacturer although the Design-Build Team shall be responsible for invoking the warranted repair work with the manufacturer. The Design-Build Team's responsibility shall be limited to the term of the manufacturer's guarantee. NCDOT would be afforded the same warranty as provided by the Manufacturer.

This guarantee provision shall be invoked only for major components of work in which the Design-Build Team would be wholly responsible for under the terms of the contract. Examples would include pavement structures, bridge components, and sign structures. This provision will not be used as a mechanism to force the Design-Build Team to return to the project to make repairs or perform additional work that the Department would normally compensate the Design-Build Team for. In addition, routine maintenance activities (i.e. mowing grass, debris removal, ruts in earth shoulders,) are not parts of this guarantee.

Appropriate provisions of the payment and/or performance bonds shall cover this guarantee for the project. In addition, failure on the part of the responsible entity(ies) of the Design-Build Team to perform guarantee work within the terms of this provision shall be just cause to remove the responsible entity(ies) from the Department's corresponding prequalified list. The Design-Build Team will be removed for a minimum of 6 months and will be reinstated only after all work has been corrected and the Design-Build Team requests reinstatement in writing.

To ensure uniform application statewide the Division Engineer will forward details regarding the circumstances surrounding any proposed guarantee repairs to the Chief Engineer for review and approval prior to the work being performed.

OUTSOURCING OUTSIDE THE USA

(5-16-06) DB1 G150

All work on consultant contracts, services contracts, and construction contracts shall be performed in the United States of America. No work shall be outsourced outside of the United States of America.

Outsourcing for the purpose of this provision is defined as the practice of subcontracting labor, work, services, staffing, or personnel to entities located outside of the United States.

The North Carolina Secretary of Transportation shall approve exceptions to this provision in writing.

IRAN DIVESTMENT ACT

(5-17-16) SP01 G151

As a result of the Iran Divestment Act of 2015 (Act), Article 6E, N.C. General Statute § 147-86.55, the State Treasurer published the Final Divestment List (List) which includes the Final Divestment List-Iran, and the Parent and Subsidiary Guidance-Iran. These lists identify

companies and persons engaged in investment activities in Iran and will be updated every 180 days. The List can be found at

https://www.nctreasurer.com/inside-the-department/OpenGovernment/Pages/Iran-Divestment-Act-Resources.aspx

By submitting the Offer, the Contractor certifies that, as of the date of this bid, it is not on the then-current List created by the State Treasurer. The Contractor must notify the Department immediately if, at any time before the award of the contract, it is added to the List.

As an ongoing obligation, the Contractor must notify the Department immediately if, at any time during the contract term, it is added to the List. Consistent with § 147-86.59, the Contractor shall not contract with any person to perform a part of the work if, at the time the subcontract is signed, that person is on the then-current List.

During the term of the Contract, should the Department receive information that a person is in violation of the Act as stated above, the Department will offer the person an opportunity to respond and the Department will take action as appropriate and provided for by law, rule, or contract.

PERMANENT VEGETATION ESTABLISHMENT

(6-11-15) 104 DB01 G160

Establish permanent vegetation stands of the Long Term Stabilization mixtures identified in the Erosion Control Scope of Work found elsewhere in this RFP. During the period between initial vegetation planting and final project acceptance, perform all work necessary to establish 80% coverage of permanent vegetation within the project limits, as well as, in borrow and waste pits. This work shall include erosion control device maintenance and installation, repair seeding and mulching, supplemental seeding and mulching, mowing, and fertilizer topdressing, as directed. All work shall be performed in accordance with the Erosion Control Scope of Work found elsewhere in this RFP and the applicable section of the 2012 *Standard Specifications for Roads and Structures*.

Once the Engineer has determined that 80% coverage of permanent vegetation has been established, the Design-Build Team will be notified to remove the remaining erosion control devices that are no longer needed. The Design-Build Team shall be responsible for, and shall correct, any areas disturbed by operations performed in permanent vegetation establishment and the removal of temporary erosion control measures, whether occurring prior to or after placing traffic on the project.

EROSION & SEDIMENT CONTROL / STORMWATER CERTIFICATION

(1-16-07) (Rev. 9-20-16) 105-16, 225-2, 16 DB1 G180

General

Schedule and conduct construction activities in a manner that will minimize soil erosion and the resulting sedimentation and turbidity of surface waters. Comply with the requirements herein regardless of whether or not a National Pollutant Discharge Elimination System (NPDES) permit for the work is required.

Establish a chain of responsibility for operations and subcontractors' operations to ensure that the *Erosion and Sediment Control / Stormwater Pollution Prevention Plan* is implemented and maintained over the life of the contract.

(A) *Certified Supervisor* – Provide a certified Erosion and Sediment Control / Stormwater (E&SC/SW) Supervisor to manage the Design-Build Team and subcontractor(s) operations, ensure compliance with Federal, State and Local ordinances and regulations, and manage the Quality Control Program.

(B) *Certified Foreman* – Provide a certified, trained foreman for each construction operation that increases the potential for soil erosion or the possible sedimentation and turbidity of surface waters.

(C) *Certified Installer* – Provide a certified installer to install or direct the installation for erosion or sediment / stormwater control practices.

(D) *Certified Designer* – Provide a certified designer for the design of the erosion and sediment control / stormwater component of reclamation plans and, if applicable, for the design of the project erosion and sediment control / stormwater plan.

Roles and Responsibilities

(A) *Certified Erosion and Sediment Control / Stormwater Supervisor* - The Certified Supervisor shall be Level II and shall be responsible for ensuring the erosion and sediment control / stormwater plan is adequately implemented and maintained on the project and for conducting the quality control program. The Certified Supervisor shall be on the project within 24 hours notice from initial exposure of an erodible surface to the project's final acceptance. The Certified Supervisor shall perform the following duties:

(1) Manage Operations - Coordinate and schedule the work of subcontractors so that erosion and sediment control / stormwater measures are fully executed for each operation and in a timely manner over the duration of the contract.

(a) Oversee the work of subcontractors so that appropriate erosion and sediment control / stormwater preventive measures are conformed to at each stage of the work.
(b) Prepare the required National Pollutant Discharge Elimination System (NPDES) Inspection Record and submit to the Engineer.
(c) Attend all weekly or monthly construction meetings to discuss the findings of the NPDES inspection and other related issues.
(d) Implement the erosion and sediment control / stormwater site plans requested.
(e) Provide any needed erosion and sediment control / stormwater practices for the Design-Build Team's temporary work not shown on the plans developed by the Design-Build Team, such as, but not limited to work

platforms, temporary construction, pumping operations, plant and storage yards, and cofferdams.

(f) Acquire applicable permits and comply with requirements for borrow pits, dewatering, and any temporary work conducted by the Design-Build Team in jurisdictional areas.

(g) Conduct all erosion and sediment control / stormwater work in a timely and workmanlike manner.

(h) Fully perform and install erosion and sediment control / stormwater work prior to any suspension of the work.

(i) Coordinate with Department, Federal, State and Local Regulatory agencies on resolution of erosion and sediment control / stormwater issues due to the Design-Build Team's operations.

(j) Ensure that proper cleanup occurs from vehicle tracking on paved surfaces and / or any location where sediment leaves the right of way.

(k) Have available a set of erosion and sediment control / stormwater plans that are initialed and include the installation date of Best Management Practices. These practices shall include temporary and permanent groundcover and be properly updated to reflect necessary plan and field changes for use and review by Department personnel, as well as regulatory agencies.

(2) Requirements set forth under the NPDES Permit – The Department's NPDES Stormwater Permit (NCS000250) outlines certain objectives and management measures pertaining to construction activities. The permit references *NCG010000, General Permit to Discharge Stormwater* under the NPDES, and states that the Department shall incorporate the applicable requirements into its delegated Erosion and Sediment Control Program for construction activities disturbing one or more acres of land. The Department further incorporates these requirements on all contracted bridge and culvert work at jurisdictional waters, regardless of size. Some of the requirements shall be, but are not limited to:

(a) Control project site waste to prevent contamination of surface or ground waters of the state, e.g. from equipment operations / maintenance construction materials, concrete washout, chemicals, litter, fuels, lubricants, coolants, hydraulic fluids, any other petroleum products, and sanitary waste.

(b) Inspect erosion and sediment control / stormwater devices and stormwater discharge outfalls at least once every 7 calendar days, and within 24 hours after a rainfall event of 0.5 inch, or greater, that occurs within a 24-hour period. At the discretion of Division of Water Resources personnel, additional monitoring may be required if the receiving stream is 303(d) listed for turbidity and the project has had documented problems managing turbidity.

(c) Maintain an onsite rain gauge or use the Department's Multi-Sensor Precipitation Estimate website to maintain a daily record of rainfall amounts and dates.

(d) Maintain erosion and sediment control / stormwater inspection records for review by Department and Regulatory personnel upon request.
(e) Implement approved reclamation plans on all borrow pits, waste sites and staging areas.
(f) Maintain a log of turbidity test results as outlined in the Department's Procedure for Monitoring Borrow Pit Discharge.
(g) Provide secondary containment for bulk storage of liquid materials.
(h) Provide training for employees concerning general erosion and sediment control / stormwater awareness, the Department's NPDES Stormwater Permit NCS000250 requirements, and the applicable requirements of the *General Permit, NCG010000*.
(i) Report violations of the NPDES Permit to the Engineer immediately who will notify the NC Department of Environmental Quality Regional Office within 24 hours of becoming aware of the violation.

(3) Quality Control Program - Maintain a quality control program to control erosion, prevent sedimentation and follow provisions / conditions of permits. The quality control program shall:

(a) Follow permit requirements related to the Design-Build Team and subcontractors' construction activities.
(b) Ensure that all operators and / or subcontractor(s) on site have the proper erosion and sediment control / stormwater certification.
(c) Notify the Engineer when the required certified erosion and sediment control / stormwater personnel are not available on the job site when needed.
(d) Conduct the inspections required by the NPDES Permit.
(e) Take corrective actions in the proper timeframe as required by the NPDES Permit for problem areas identified during the NPDES inspections.
(f) Incorporate erosion control into the work in a timely manner and stabilize disturbed areas with mulch / seed or vegetative cover on a section-by-section basis.
(g) Use flocculants approved by state regulatory authorities where appropriate and where required for turbidity and sedimentation reduction.
(h) Ensure proper installation and maintenance of temporary erosion and sediment control devices.
(i) Remove temporary erosion or sediment control devices when they are no longer necessary as agreed upon by the Engineer.
(j) The Design-Build Team's quality control and inspection procedures shall be subject to review by the Engineer. Maintain NPDES inspection records and make records available at all times for verification by the Engineer.

(B) *Certified Foreman* - At least one Certified Foreman shall be onsite for each type of work listed herein during the respective construction activities to control erosion, prevent sedimentation and follow permit provisions:

(1) Foreman in charge of grading activities

(2) Foreman in charge of bridge or culvert construction over jurisdictional areas
(3) Foreman in charge of utility activities

The Design-Build Team may request to use the same person as the Level II Supervisor and Level II Foreman. This person shall be onsite whenever construction activities as described above are taking place. This request shall be approved by the Engineer prior to work beginning.

The Design-Build Team may request to name a single Level II Foreman to oversee multiple construction activities on small bridge or culvert replacement projects. This request shall be approved by the Engineer prior to work beginning.

(C) *Certified Installers* - Provide at least one onsite, Level I Certified Installer for each of the following erosion and sediment control / stormwater crew:

(1) Seeding and Mulching
(2) Temporary Seeding
(3) Temporary Mulching
(4) Sodding
(5) Silt fence or other perimeter erosion / sediment control device installations
(6) Erosion control blanket installation
(7) Hydraulic tackifier installation
(8) Turbidity curtain installation
(9) Rock ditch check / sediment dam installation
(10) Ditch liner / matting installation
(11) Inlet protection
(12) Riprap placement
(13) Stormwater BMP installations (such as but not limited to level spreaders, retention / detention devices)
(14) Pipe installations within jurisdictional areas

If a Level I *Certified Installer* is not onsite, the Design-Build Team may substitute a Level II Foreman for a Level I Installer, provided the Level II Foreman is not tasked to another crew requiring Level II Foreman oversight.

(D) *Certified Designer* – Include the certification number of the Level III-B Certified Designer on the erosion and sediment control / stormwater component of all reclamation plans and if applicable, the certification number of the Level III-A Certified Designer on the design of the project erosion and sediment control / stormwater plan.

Preconstruction Meeting

Furnish the names of the *Certified Erosion and Sediment Control / Stormwater Supervisor, Certified Foremen, Certified Installers and Certified Designers* and notify the Engineer, in writing, of changes in certified personnel over the life of the contract within two days of change.

Ethical Responsibility

Any company performing work for the North Carolina Department of Transportation has the ethical responsibility to fully disclose any reprimand or dismissal of an employee resulting from improper testing or falsification of records.

Revocation or Suspension of Certification

Upon recommendation of the Chief Engineer to the certification entity, certification for Supervisor, Certified Foremen, Certified Installers and Certified Designer may be revoked or suspended with the issuance of an Immediate Corrective Action (ICA), Notice of Violation (NOV), or Cease and Desist Order for erosion and sediment control / stormwater related issues.

The Chief Engineer may recommend suspension or permanent revocation of certification due to the following:

(A) Failure to adequately perform the duties as defined within this certification provision
(B) Issuance of an ICA, NOV, or Cease and Desist Order
(C) Failure to fully perform environmental commitments as detailed within the permit conditions and specifications
(D) Demonstration of erroneous documentation or reporting techniques
(E) Cheating or copying another candidate's work on an examination
(F) Intentional falsification of records
(G) Directing a subordinate under direct or indirect supervision to perform any of the above actions
(H) Dismissal from a company for any of the above reasons
(I) Suspension or revocation of one's certification by another entity

Suspension or revocation of a certification will be sent by certified mail to the certificant and the Corporate Head of the company that employs the certificant.

A certificant has the right to appeal any adverse action which results in suspension or permanent revocation of certification by responding, in writing, to the Chief Engineer within ten calendar days after receiving notice of the proposed adverse action.

Chief Engineer
1536 Mail Service Center
Raleigh, NC 27699-1536

Failure to appeal within ten calendar days shall result in the proposed adverse action becoming effective on the date specified on the certified notice. Failure to appeal within the time specified shall result in a waiver of all future appeal rights regarding the adverse action taken. The certificant will not be allowed to perform duties associated with the certification during the appeal process. The Chief Engineer will hear the appeal and make a decision within seven days of hearing the appeal. The decision of the Chief Engineer shall be final and will be made in writing to the certificant.

If a certification is temporarily suspended, the certificant shall pass any applicable written examination and any proficiency examination, at the conclusion of the specified suspension period, prior to having the certification reinstated.

Measurement and Payment

Certified Erosion and Sediment Control / Stormwater Supervisor, Certified Foremen, Certified Installers and *Certified Designer* will be incidental to the project for which no direct compensation will be made.

PROCEDURE FOR MONITORING BORROW PIT DISCHARGE

(1-22-13) DB1 G181

Water discharge from borrow pit sites shall not cause surface waters to exceed 50 NTUs (nephelometric turbidity unit) in streams not designated as trout waters and 10 NTUs in streams, lakes or reservoirs designated as trout waters. For lakes and reservoirs not designated as trout waters, the turbidity shall not exceed 25 NTUs. If the turbidity exceeds these levels due to natural background conditions, the existing turbidity level shall not be increased.

If during any operating day, the downstream water quality exceeds the standard, the Design-Build Team shall do all of the following:

(A) Either cease discharge or modify the discharge volume or turbidity levels to bring the downstream turbidity levels into compliance, or

(B) Evaluate the upstream conditions to determine if the exceedance of the standard is due to natural background conditions. If the background turbidity measurements exceed the standard, operation of the pit and discharge can continue as long as the stream turbidity levels are not increased due to the discharge.

(C) Measure and record the turbidity test results (time, date and sampler) at all defined sampling locations 30 minutes after startup and at a minimum, one additional sampling of all sampling locations during that 24-hour period in which the borrow pit is discharging.

(D) Notify DWQ within 24 hours of any stream turbidity standard exceedances that are not brought into compliance.

During the Environmental Assessment required by Article 230-4 of the 2012 *Standard Specifications for Roads and Structures*, the Design-Build Team shall define the point at which the discharge enters into the State's surface waters and the appropriate sampling locations. Sampling locations shall include points upstream and downstream from the point at which the discharge enters these waters. Upstream sampling location shall be located so that it is not influenced by backwater conditions and represents natural background conditions. Downstream sampling location shall be located at the point where complete mixing of the discharge and receiving water has occurred.

The discharge shall be closely monitored when water from the dewatering activities is introduced into jurisdictional wetlands. Any time visible sedimentation (deposition of sediment) on the

wetland surface is observed, the dewatering activity will be suspended until turbidity levels in the stilling basin can be reduced to a level where sediment deposition does not occur. Staining of wetland surfaces from suspended clay particles, occurring after evaporation or infiltration, does not constitute sedimentation. No activities shall occur in wetlands that adversely affect the functioning of a wetland. Visible sedimentation will be considered an indication of possible adverse impacts on wetland use.

The Engineer will perform independent turbidity tests on a random basis. These results will be maintained in a log within the project records. Records will include, at a minimum, turbidity test results, time, date and name of sampler. Should the Department's test results exceed those of the Design-Build Team's test results, an immediate test shall be performed jointly with the results superseding the previous test results of both the Department and the Design-Build Team.

To plan, design, construct, and maintain BMPs to address water quality standards, the Design-Build Team shall use the *NCDOT Turbidity Reduction Options for Borrow Pits Matrix*, available at the website noted below:

http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/fieldops/downloads/Files/TurbidityReductionOptionSheet.pdf

Tier I Methods include stilling basins which are standard compensatory BMPs. Other Tier I methods are noncompensatory and shall be used when needed to meet the stream turbidity standards. Tier II Methods are also noncompensatory and are options that may be needed for protection of rare or unique resources or where special environmental conditions exist at the site which have led to additional requirements being placed in the DWQ's 401 Certifications and approval letters, Isolated Wetland Permits, Riparian Buffer Authorization or a DOT Reclamation Plan's Environmental Assessment for the specific site. Should the Design-Build Team exhaust all Tier I Methods on a site exclusive of rare or unique resources or special environmental conditions, Tier II Methods may be required by regulators on a case by case basis per supplemental agreement.

The Design-Build Team may use cation exchange capacity (CEC) values from proposed site borings to plan and develop the Price Proposal for the project. CEC values exceeding 15 milliequivalents per 100 grams of soil may indicate a high potential for turbidity and should be avoided when dewatering into surface water is proposed.

No additional compensation for monitoring borrow pit discharge will be paid.

CLEARING AND GRUBBING

(9-1-11) DB2 R01

For all sites, the Design-Build Team shall perform Method "II modified" as shown on Standard No. 200.02 of the 2012 NCDOT *Roadway Standard Drawings.* However, clearing limits shall extend 5 feet beyond the toe of slope with no grubbing.

PIPE INSTALLATION 300 DB3 R01
(9-28-12) (Rev 8-3-15)

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Page 3-1, Article 300-2, Materials, line 15, in the materials table, replace "Flowable Fill" and "Geotextiles" with the following:

Item	Section
Flowable Fill, Excavatable	1000-6
Grout, Type 2	1003
Geotextiles, Type 4	1056

Page 3-1, Article 300-2, Materials, line 23-24, replace sentence with the following:

Provide foundation conditioning geotextile, and geotextile to wrap pipe joints, in accordance with Section 1056 for Type 4 geotextile.

Page 3-3, Subarticle 300-6(A), Rigid Pipe, **line 2,** in the first paragraph, replace "an approved non-shrink grout" with "grout" and **line 4**, in the second paragraph, replace "filtration geotextile" with "geotextile"

Page 3-3, Article 300-7, Backfilling, lines 37-38, in the first and second sentences of the fifth paragraph, replace "Excavatable flowable fill" with "Flowable fill".

DRAINAGE PIPE
(9-1-11) DB3 R36

Description

Where shown in the plans developed by the Design-Build Team, the Contractor shall use Reinforced Concrete Pipe, Corrugated Aluminum Alloy Pipe, Aluminized Corrugated Steel Pipe, Corrugated Polyethylene Pipe (HDPE Pipe) or Polyvinyl-Chloride Pipe (PVC Pipe) in accordance with the following requirements:

All pipe types are subject to the maximum and minimum fill height requirements as found on Roadway Standard Drawing 300.01 - Sheet 3 of 3. The appropriate Reinforced Concrete Pipe class and the appropriate gage thickness for Corrugated Aluminum Alloy Pipe and Aluminized Corrugated Steel Pipe shall be selected based on fill height.

Site specific conditions may limit a particular material beyond what is identified in this Special Provision. These conditions include, but are not limited to, abrasion, environmental, soil resistivity and pH, high ground water and special loading conditions. The Design-Build Team shall determine if additional restrictions are necessary.

Slope drains shall be Corrugated Aluminum Alloy Pipe, Aluminized Corrugated Steel Pipe, Corrugated Polyethylene Pipe (HDPE Pipe) or Polyvinyl-Chloride Pipe (PVC Pipe).

Transverse median drains and open-ended cross drains shall be Reinforced Concrete Pipe, Corrugated Aluminum Alloy Pipe, Aluminized Corrugated Steel Pipe, Corrugated Polyethylene Pipe (HDPE Pipe) or Polyvinyl-Chloride Pipe (PVC Pipe).

Storm drain system pipes shall be Reinforced Concrete Pipe, Corrugated Polyethylene Pipe (HDPE Pipe) or Polyvinyl-Chloride Pipe (PVC Pipe).

PRICE ADJUSTMENTS FOR ASPHALT BINDER

(9-1-11) DB6 R25

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the 2012 *Standard Specifications for Roads and Structures.*

When it is determined that the monthly selling price of asphalt binder on the first business day of the calendar month during which the last day of the partial payment period occurs varies either upward or downward from the Base Price Index, the partial payment for that period will be adjusted. The partial payment will be adjusted by adding the difference (+ or -) of the base price index subtracted from the monthly selling price multiplied by the total theoretical quantity of asphalt binder authorized for use in the plant mix placed during the partial payment period involved.

The base price index for asphalt binder for plant mix is **$ 325.71** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on **October 1, 2016 _**.

PRICE ADJUSTMENTS - ASPHALT CONCRETE PLANT MIX

(9-1-11) (Rev. 3-13-13) DB6 R26

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Page 6-18, Article 609-11 and Page 6-35, Article 610-14

Add the following paragraph before the first paragraph:

The "Asphalt Price" used to calculate any price adjustments set forth in this section shall be $40 per theoretical ton. This price shall apply for all mix types.

ASBESTOS ASSESSMENT FOR BRIDGE DEMOLITION AND RENOVATION ACTIVITIES

04/07/16 DBI 40

Inspection for Asbestos Containing Material

Prior to conducting bridge demolition or renovation activities, the Design-Build Team shall thoroughly inspect the bridge or affected components for the presence of asbestos containing material (ACM) using a firm prequalified by NCDOT to perform asbestos surveys. The inspection must be performed by a N.C. accredited asbestos inspector with experience inspecting bridges or other industrial structures. The N.C. accredited asbestos inspector must conduct a

thorough inspection, identifying all asbestos-containing material as required by the Environmental Protection Agency National Emission Standards for Hazardous Air Pollutants (NESHAP) Code of Federal Regulations (CFR) 40 CFR, Part 61, Subpart M.

The Design-Build Team shall submit an inspection report to the Engineer, which at a minimum must include information required in 40 CFR 763.85 (a)(4) vi)(A)-(E), as well as a project location map, photos of existing structure, the date of inspection and the name, N.C. accreditation number, and signature of the N.C. accredited asbestos inspector who performed the inspection and completed the report. The cover sheet of the report shall include project identification information. Place the following notes on the cover sheet of the report and check the appropriate box:

___ ACM was found
___ ACM was not found

Removal and Disposal of Asbestos Containing Material

If ACM is found, notify the Engineer. Compensation for removal and disposal of ACM is considered extra work in accordance with Article 104-7 of the Standard Specifications.

An Asbestos Removal Permit must be obtained from the Health Hazards Control Unit (HHCU) of the N.C. Department of Health & Human Services, Division of Public Health, if more than 35 cubic feet, 160 square feet, or 260 linear feet of regulated ACM (RACM) is to be removed from a structure and this work must be completed by a Design-Build Team prequalified by NCDOT to perform asbestos abatement. RACM is defined in 40 CFR, Part 61, Subpart M. Note: 40 CFR 763.85 (a)(4) vi)(D) defines ACM as surfacing, TSI and Miscellaneous which does not meet the NESHAP RACM.

Demolition Notification

Even if no ACM is found (or if quantities are less than those required for a permit), a Demolition Notification (DHHS-3768) must be submitted to the HHCU. Notifications and Asbestos Permit applications require an original signature and must be submitted to the HHCU 10 working days prior to beginning demolition activities. The 10 working day period starts based on the post-marked date or date of hand delivery. Demolition that does not begin as originally notified requires submission of a separate revision form HHCU 3768-R to HHCU. Reference the North Carolina Administrative Code, Chapter 10A, Subchapter 41C, Article .0605 for directives on revision submissions.

<u>Contact Information</u>
Health Hazards Control Unit (HHCU)
N.C. Department of Health and Human Services
1912 Mail Service Center
Raleigh, NC 27699-1912
Telephone: (919) 707-5950
Fax: (919) 870-4808

Special Considerations

Buncombe, Forsyth, and Mecklenburg counties also have asbestos permitting and NESHAP requirements must be followed. For projects involving permitted RACM removals, both the applicable county and the state (HHCU) must be notified.

For demolitions with no RACM, only the local environmental agencies must be notified. Contact information is as follows:

Buncombe County
WNC Regional Air Pollution Control Agency
49 Mt. Carmel Road
Asheville, NC 28806
(828) 250-6777

Forsyth County
Environmental Affairs Department
537 N. Spruce Street
Winston-Salem, NC 27101
(336) 703-2440

Mecklenburg County
Land Use and Environmental Services Agency
Mecklenburg Air Quality
700 N. Tryon Street
Charlotte, NC 28202
(704) 336-5430

Additional Information

Additional information may be found on N.C. asbestos rules, regulations, procedures and N.C. accredited inspectors, as well as associated forms for demolition notifications and asbestos permit applications at the N.C. Asbestos Hazard Management Program website:

www.epi.state.nc.us/epi/asbestos/ahmp.html

GENERAL

The State will not be bound by oral explanations or instructions given at any time during the bidding process or after award. Only information that is received in response to this RFP will be evaluated; reference to information previously submitted will not suffice as a response to this solicitation.

NO CONTACT CLAUSE

To ensure that information is distributed equitably to all short-listed Design-Build Teams, all questions and requests for information shall be directed to the State Contract Officer through the Design-Build e-mail address. This precludes any Design-Build Team Member, or representative, from contacting representatives of the Department, other State Agencies or Federal Agencies either by phone, e-mail or in person concerning the Design-Build Project.

USE OF TERMS

Throughout this RFP and all manuals, documents and standards referred to in the RFP, the terms Contractor, Bidder, Design-Builder, Design-Build Team, Team, Firm, Company, and Proposer are synonymous.

Throughout this RFP and all manuals, documents and standards referred to in the RFP, the terms NCDOT, Department, Engineer, and State are synonymous.

DESIGN REFERENCES

Design references developed and published by NCDOT and those developed and published by other agencies and adopted for use by NCDOT which are to be used in the design of this project may be obtained by contacting Contract Standards and Development within the Technical Services Division. Standard prices for materials, which the Department normally sells for a fee, will be in effect. The Design-Build Team shall be responsible for designing in accordance with the applicable documents and current revisions and supplements thereto.

REVIEW OF SUBMITTALS

Submittals will be reviewed within 10 working days (15 days for temporary structures, FEMA compliance documents, and temporary shoring) from the date of receipt by NCDOT unless otherwise stipulated in the scope of work. All submittals shall be prepared and submitted in accordance with the *"Express Design-Build Bridge Replacement Submittal Guidelines - Year 5 March 24, 2016"* which by reference are incorporated and made a part of this contract. The Design-Build Team may, however, propose an alternate scheme for submittals that include a combination of submittals, a different order of submittals, or other submittal scheme. This alternate approach to submittals must be submitted to the Design-Build Unit after award of the contract and approved by the Department. If an approved alternate approach to submittals is approved, the Design-Build Team may use the alternate approach but shall assume all risk associated with any necessary re-work or re-design. Moreover, the alternate approach must

include, at a minimum, final plans and RFC plans for each of the design disciplines. The Department reserves the right to use portions or all of the approved alternate approach on any concurrent or future Design-Build projects.

All submittals shall be made simultaneously to the Design-Build Unit and the Resident Engineer. The Department will not accept subsequent submittals until prior submittal reviews have been completed for that item. The Design-Build Team shall inform the Design-Build Unit in writing of any proposed changes to the previously reviewed submittals and obtain approval prior to incorporation. The Design-Build Team shall prioritize submittals in the event that multiple submittals are made based on the current schedule. All submittals shall include pertinent Special Provisions. No work shall be performed prior to Department review and approval of the applicable design submittals.

GENERAL SCOPE

The scope of work for this project includes design, construction and management of the replacement of six (6) bridges. Construction shall include, but not be limited to, all necessary clearing, grading, roadway, drainage, structures, utility coordination and relocation, and erosion and sediment control work items for the bridge replacements. Construction shall comply with 2012 *NCDOT Standard Specifications for Roads and Structures* and any special provisions.

Project services include, but are not limited to:

- **Design Services** – completion of construction plans
- **Construction Services** – necessary to build and ensure workmanship of the designed facility
- **Permits –** development of all documents for permits, as necessary
- **Utility Coordination** – minor utility relocation efforts, as needed
- **Right of Way** – acquisition of additional right of way, as necessary, to construct the project.
- **As-Constructed Drawings**

Construction Engineering Inspection shall be provided by NCDOT Division personnel or will be performed under a separate contract.

The Department has prepared Low Impact Bridge Replacement Data Sheets (serves as a Programmatic Categorical Exclusions) for each bridge.

All designs shall be in Microstation format using Geopak software (current version used by the Department).

DESIGN AND CONSTRUCTION PERFORMED BY DESIGN-BUILD TEAM

The Design-Build Team shall acknowledge that project documents furnished by the Department are preliminary and provided solely to assist the Design-Build Team in the development of the project design. The Design-Build Team shall be fully and totally responsible for the accuracy

and completeness of all work performed under this contract and shall save the State harmless and shall be fully liable for any additional costs and all claims against the State which may arise due to errors, omissions and negligence of the Design-Build Team in performing the work required by this contract.

There shall be no assignment, subletting or transfer of the interest of the Design-Build Team in any of the work covered by the Contract without the written consent of the State, except that the Design-Build Team may, with prior written notification of such action to the State, sublet property searches and related services without further approval of the State.

The Design-Build Team shall certify all plans, specifications, estimates and engineering data furnished by the Team. All work by the Design-Build Team shall be performed in a manner satisfactory to the State and in accordance with the established customs, practices, and procedures of the North Carolina Department of Transportation, and in conformity with the standards adopted by the American Association of State Highway Transportation Officials, and approved by the U.S. Secretary of Transportation as provided in Title 23, U.S. Code, Section 109 (b). The decision of the Engineer/State/Department shall control in all questions regarding location, type of design, dimension of design, and similar questions.

Alternate designs, details, or construction practices (such as those employed by other states, but not standard practice in NC) are subject to Department review and acceptance and will be evaluated on a case by case basis.

The Design-Build Team shall not change team members, subconsultants or subcontractors identified in the Statement of Qualifications (SOQ) without written consent of the Engineer or the State Contract Officer. In addition, subconsultants and subcontractors not identified in the SOQ shall not perform any work without written consent by the Engineer. Individual offices of the Design-Build Team not identified in the Statement of Qualifications submitted shall not perform any work without written consent by the Engineer. Failure to comply with this requirement may be justification for removing the Team from further consideration for this project and disqualification from submitting on future Design-Build Projects.

All firms shall be prequalified by the Department for the work they are to perform. Joint Ventures, LLCs or any legal structure that are different than the existing prequalification status must be prequalified prior to the Price Proposal submittal deadline. Subcontractors need only be prequalified prior to performing the work. Design firms shall be prequalified prior to the Price Proposal submittal deadline. If the work is to be performed by an office other than the one that is prequalified, that office shall be prequalified prior to any design submittals.

ACCESS TO SUBMITTAL SITE

To reduce the submittal review time and increase the efficiency of the review process, the Design-Build Team will need access to the project's submittal site. The site will include a library that will be used for the Design-Build Team to submit documents to NCDOT to review and another for NCDOT to provide response back to the Design-Build Team. The Design-Build Team's Project Manager shall provide a list of team members that will require access to this

portal. This list shall include the name, e-mail address and North Carolina Identity Management (NCID) for each individual team member. Once the list is complete, it shall be submitted to the Design-Build e-mail address (designbuild@ncdot.gov).

To create an NCID account, each individual shall go to NCDOT's Connect website (https://connect.ncdot.gov) and click on the "How to get an Account" link and then, "Create NCID".

The Department will obtain access rights for these individuals and notify the Technical Services Project Manager accordingly. Individuals may then re-enter the "Connect" site and login with their NCID account. Once logged in, the Teamsite "XXXX Project Submittals" link will be apparent on the left side of the webpage.

Please note that all submittals for this project will be electronic and will be submitted to the Teamsite, in accordance with the "*Express Design-Build Bridge Replacement Submittal Guidelines – Year 5, March 24, 2016".* NCDOT reserves the right to request a hard copy of any submittal or supporting electronic files or calculation needed to complete the review.

ELECTRONIC PLAN SUBMITTALS AND E-SIGNATURES

The Design-Build Team shall submit all Release for Construction Plans in accordance with the NCDOT e-Signature requirements, including but not limited to providing signed and sealed searchable .pdf files. Reference the website noted below for additional information:

https://connect.ncdot.gov/projects/roadway/pages/private-engineering-firm-resources.aspx

ETHICS POLICY

Employees employed by the Design-Build Team or employees employed by any subconsultant for the Design-Build Team to provide services for this project shall comply with the Department's ethics policy. Failure to comply with the ethics policy will result in the employee's removal from the project and may result in removal of the Company from the Department's appropriate prequalified list.

APPROVAL OF PERSONNEL

The Department will have the right to approve or reject any personnel, assigned to a project by the Design-Build Team.

In the event of engagement of a former employee of the Department, the Design-Build Team or their subcontractors shall restrict such person or persons from working on any of the Design-Build Team's contracted projects in which the person or persons were "formerly involved" while employed by the State. The restriction period shall be for the duration of the contracted project with which the person was involved. *Former Involvement* shall be defined as active participation in any of the following activities:

Drafting the contract
Defining the contract scope of the contract
Design-Build Team selection
Negotiation of the contract cost (including calculating manhours or fees); and
Contract administration

An exception to these terms may be granted when recommended by the Secretary and approved by the Board of Transportation.

Failure to comply with the terms stated above in this section shall be grounds for termination of this contract and/or not being considered for selection of work on future contracts for a period of one year.

SUBMITTAL OF PRICE PROPOSALS

Price Proposals shall be submitted electronically in accordance with Articles 102-8(B) in the Standard Specifications for Roads and Structures. **No Price Proposals will be received after 2:00 p.m. Local Time on November 15, 2016.**

A Bid Bond or Bid Deposit in the amount of 5% of the Total Amount Bid will be required. The Bidder shall submit an electronic Bid Bond with each electronic bid submittal unless he elects to furnish a Bid Deposit to the address shown below:

Mr. Randy A. Garris, P.E.
Contract Standards and Development
1020 Birch Ridge Drive
Century Center Complex- Building B
Raleigh, NC 27610

Opening of Price Proposals

At the time and date specified, the State Contract Officer will open and read the Price Proposals and calculate the percentage difference between the Price Proposals submitted and the Engineer's Estimate.

Best and Final Offer

In the event initial Price Proposals exceed an acceptable range of the Engineer's Estimate or if the Department feels it is necessary for any reason the Department may choose to make amendments to the details of the RFP and request a Best and Final Offer from all of the previously short-listed teams. Alternately, the Department may choose to redistribute to the short-listed Design-Build Teams another RFP for the project with no amendments to the RFP.

The Design-Build Teams shall submit a revised Price Proposal at the time and date specified in the Best and Final RFP. This will constitute the Design-Build Team's Best and Final Offer. Award of the project may then be made to the Design-Build Team with the lowest apparent Price Proposal in response to the Best and Final RFP.

Stipend

A stipulated fee of **$10,000** will be awarded to each short-listed Design-Build Team that provides a responsive, but unsuccessful, Price Proposal. If a contract award is not made, all short-listed Design-Build Teams that provide a responsive Price Proposal shall receive the stipulated fee. Once award is made, or a decision is made not to award, unsuccessful Design Build Teams will be notified of the opportunity to apply for the stipulated fee.

In the event that the Department suspends or discontinues the procurement process prior to the Price Proposal submittal date current at the time of the suspension, no stipulated fee will be paid.

ROADWAY SCOPE OF WORK

Project Details

- The Design-Build Project consists of replacing a total of six (6) bridges located in Robeson County. All bridges shall be constructed in place with off-site detours.

- The Design-Build Team shall be responsible for designing and constructing the bridge approaches to tie the new structures into the existing pavement in accordance with the *NCDOT Sub Regional Tier Design Guidelines for Bridge Projects* dated February 2008, as applicable, current NCDOT design standards, and NCDOT policies. The Design-Build Team shall make every effort to stay within the existing maintenance limits to reduce or eliminate the need for additional right of way or easements.

- All bridges are considered subregional.

- The Design-Build Team shall use Design Speed (unless otherwise noted herein), ADT, Travel Lane Width, and the Paved Shoulder Width as shown in the table below for the full length of the construction limits. The Design Build Team shall use the Out to Out Bridge Width as specified in the Structures Scope of Work. The lanes shall be striped to match existing travel lane widths.

County	Bridge No.	Route	Design Speed (mph)	ADT	Travel Lane Width (ft)	Paved Shoulder (ft)
Robeson	770026	SR 1955	55	700	10	0
Robeson	770223	SR 1303	55	1600	11	2
Robeson	770413	SR 1323	45	500	10	0
Robeson	770414	SR 1323	45	500	10	0
Robeson	770432	SR 1157	55	500	10	0
Robeson	770433	SR 1160	55	530	10	0

- At a minimum, the Design-Build Team shall construct full depth pavement for 50 feet from each fill face, and in all areas of pavement removal, widening or re-alignment. In no case shall the existing pavement width be narrowed.

- Excluding Bridge Nos. 770413, 770414 and 770223 the length of overlay, wedging, and paved shoulders, at each bridge site shall extend a minimum 300 feet total (excludes proposed bridge length). The Design-Build Team shall provide a grade for the project limits which provides the most desirable grade ties to existing within the project limits.

- At Bridge Nos. 770413 and 770414, the overlay and wedging shall extend continuously between the bridges and to a minimum of 150 feet from the end (fill face) of the proposed structures. The guardrail shall extend continuously between the bridges.

- At Bridge No. 770223, the length of overlay and wedging, paved shoulders and guardrail shall extend continuously between the two overflow pipes (including the bridge) and a

minimum of 75 feet before the eastern proposed overflow structure wingwall and 75 feet beyond the western proposed overflow structure wingwall.

- All paved shoulders shall be extended to the end of construction limits and blunt ended.

- The Design-Build Team shall pave to the face of guardrail for its full length and taper at an 8:1 ratio to the proposed edge of pavement.

- Outside the guardrail limits on the subregional tier, for all approaches with paved shoulders, the Design-Build Team shall provide a minimum of 2'-0" of graded shoulder from the edge of the pavement to the shoulder point.

- The vertical alignment may be adjusted as needed by the Design-Build Team to assist in the attainment of FEMA compliance or to assist in minimizing hydraulic spread. (Reference the *Hydraulic Scope of Work*).

- Unless noted otherwise elsewhere in the RFP, all guardrail should be designed and placed in accordance with the January 2012 NCDOT *Standard Drawings* and/or approved details in lieu of standards. Unless noted otherwise elsewhere in the RFP, for subregional bridges, the length of guardrail installed shall be based on the length provided in the NCDOT *Sub Regional Tier Design Guidelines for Bridge Projects* dated February 2008.

- A crest vertical curve high point is permitted on a bridge or approach slab provided the Design-Build Team can demonstrate that (1) the design directs water off the travel lanes in an effective manner and (2) providing a tangent grade on the structure would create significant additional roadway approach work. In no case shall a sag vertical curve low point be located on any bridge or approach slab.

- The Design-Build Team will be responsible for furnishing and placing pin and caps for all proposed right of way acquired as part of this project.

- The Department has met on-site with the agencies or obtained their comments at all bridge sites in this RFP. Any variations in the Design-Build Team's proposed design and/or construction methods that nullify the decisions reached between the Department and the environmental agencies, and/or will require additional coordination with the environmental agencies shall be the sole responsibility of the Design-Build Team. The Department will not allow any contract time extensions or additional compensation associated with any coordination or approval process resulting from design and/or construction modifications.

- Unless otherwise noted herein, reductions in design speeds in order to retain existing horizontal and vertical alignments will be allowed per the NCDOT *Sub Regional Tier Guidelines* dated February 2008; any further reductions will require a design exception. Other design exceptions will only be considered if the proposed criteria meet or exceed existing conditions.

- The Design-Build Team shall maintain existing driveway access and/or relocate if necessary to accommodate construction. At Bridge Nos. 770432 and 770433, the Design-Build Team shall maintain driveway access for the maintenance of the canals in the southeast and southwest quadrants.

- Unless noted otherwise elsewhere in the RFP, the Design-Build Team may use asymmetrical widening about the existing bridge and roadway centerline where appropriate to minimize impacts to utilities and/or natural systems.

- Bridge approach slabs are required at all bridge ends. The minimum bridge approach slab length shall be 12 feet for the subregional tier sites.

- The Design-Build Team shall be responsible for designing, fabricating, and installing Type D signs that designate the name of the water crossing. For those bridges along the same roadway, it is permissible to provide water crossing signs just before and after the outermost bridges, provided the name of the waterway does not vary. The Design-Build Team shall be responsible for relocating other existing signs on new supports within the project construction limits. Sign Details may be submitted in lieu of a full signing plan submittal.

- The Design-Build Team shall cooperate with the Resident on bus turnarounds and provide bus turnarounds with ABC as necessary for bridges not constructed during the summer.

General

- Unless otherwise noted herein, the design shall be in accordance with the NCDOT *Sub Regional Tier Design Guidelines for Bridge Projects* dated February 2008, the 2011 AASHTO *A Policy on Geometric Design of Highways and Streets, Roadway Design Policy and Procedure Manual, Roadway Design Guidelines for Design-Build Projects*, 2012 NCDOT *Standard Specifications for Roads and Structures, the* 2011 AASTHTO *Roadside Design Guide*, 4th Edition and 2012 Errata, and the 2006 *Chapter 6 Update* and January 2012 NCDOT *Roadway Standard Drawings.*

- Once all changes have been incorporated into the "Released for Construction" roadway plan set for each site, the Design-Build Team shall provide a PDF of the sealed plans to the Design-Build Unit.

NCDOT Information Supplied

- An electronic copy of NCDOT's *Sub Regional Tier Design Guidelines for Bridge Projects* dated February 2008 may be located at the following website:

  https://connect.ncdot.gov/projects/Roadway/RoadwayDesignAdministrativeDocuments/Sub%20Regional%20Tier%20Guidelines.pdf

- The NCDOT will provide electronic surveys and wetland delineation files to the Design-Build Team for each bridge site. Any additional supplemental surveys, including but not limited to additional topography, existing and proposed roadway, structure sites,

underground and overhead utilities, existing and proposed drainage, wetland delineation, right of way, parcel names, and deed research and descriptions shall be the responsibility of the Design-Build Team to acquire and process. The Design-Build Team shall modify / incorporate boundary information used for the determination and valuation of property solely under the direct supervision of a Professional Land Surveyor registered in North Carolina. Known existing utilities have been located and will be included with the survey data.

- The Design-Build Team shall be responsible for confirming the location of the utilities and the type/size of facilities. Any additional SUE work shall be the responsibility of the Design-Build Team.

- The NCDOT will provide final pavement designs for each bridge site.

- The NCDOT will provide field scoping meeting worksheets for each bridge site.

STRUCTURES SCOPE OF WORK

Project Details:

The Design-Build Team will be responsible for all structures necessary to complete the project in accordance with the table provided herein. Reference the Project Special Provision entitled "Measurement and Payment" for a description of pay items and resolution of differences between the quantities and data provided herein and the final design prepared by the Design-Build Team and approved by the Department.

All bridge lengths stated herein are based on an assumed end bent cap depth of 2'-6" except for Bridge Nos. 770413 and 770414. The bridge length for Bridge Nos. 770413 and 770414 are based on an assumed end bent cap depth of 4'-0".

All bridges shall be cored slab or box beam with a bituminous concrete overlay riding surface. Superstructure depths may vary per span if necessary.

At all Bridges, Design-Build Team shall provide a 42-inch Vertical Concrete Barrier Rail per Structures Management Manual. Precast Barriers will not be allowed.

Note that the bridge lengths in the table below are from fill face to fill face and therefore may require adjustment to the length on any cored slab standard that the Design-Build Team may wish to use. In lieu of adjusting these beam lengths, and at no additional cost to the Department, the Design-Build Team may elect to use the cored slab 5 foot increment standards and lengthen the fill face to fill face dimension as needed. Regardless of the method chosen, the Design-Build Team shall ensure that the model used for FEMA compliance includes the correct span lengths and end points (end of beam).

Structure Number	Site Description	Out-Out Width (ft)	Fill Face to Fill Face Length (ft)	Bent Placement Limitations	# of Spans	End Bent #1 Foundation Length (& est. tip elev.)	End Bent #2 Foundation Length (& est. tip elev.)	Interior Bent Foundation Length (& est. tip elev.)	Foundation Type
770026	SR 1955 over Ten Mile Swamp	33	125	Allowed in water, center	2	85 (15)	85 (15)	90 (15)	Steel H-Piles @ End and Interior Bents
770223	SR 1303 over Gum Swamp	33	85	1 at water's edge	2	80 (15)	80 (15)	85 (15)	Steel H-Piles @ End and Interior Bents
770413	SR 1323 over Little Ramp Swamp	33	55	None	1	70 (29)	70 (29)	-	Steel H-Piles @ End
770414	SR 1323 over Little Ramp Swamp	33	85	1 at water's edge, not in main channel	2	80 (19)	80 (19)	85 (19)	Steel H-Piles @ End and Interior Bents
770432	SR 1157 over Back Swamp Canal	33	85	Allowed in water, not in center third of channel	2	80 (15)	80 (17)	85 (16)	Steel H-Piles @ End and Interior Bents
770433	SR 1160 over Back Swamp	33	90	Both at water's edge	3	70 (31)	70 (31)	75 (31)	Steel H-Piles @ End and Interior Bents

NOTES:

At water's edge refers to a position roughly five feet from top of bank or vegetation line, unless otherwise noted.

Assumed Foundation Type at End Bents is Driven Steel H-Piles with factored resistance per NCDOT Standard Bridge Loads and NCDOT LRFD Driven Pile Policy.

Assumed Foundation Type at Interior Bents is Driven Steel H-Piles with factored resistance per NCDOT Standard Bridge Loads and NCDOT LRFD Driven Pile Policy.

The estimated tip elevations are based on an examination of the borings and taking into account roughly 10 feet of scour depth and are shown for informational purposes. The estimated tip elevations are not necessarily true elevations but may instead relate to an assumed benchmark noted on the boring logs; benchmarks were not always accessible at the time of borings. Foundation length was determined by comparing the existing grade and bridge seat elevations with the estimated pile tip elevations, taking into account any adjustment needed to the assumed benchmark, as appropriate.

Bridge Removal:

The Design-Build team is responsible for the removal and disposal of all existing bridges, piles, abutments, and previous bridge substructure remnants per NCDOT's *Best Management Practices of Maintenance and Construction Activities* and the Standard Specifications, except as otherwise noted herein.

For existing bridges that have paint systems containing red lead paint, the Design-Build Team is responsible for handling, removing, shipping, and disposing of these materials in accordance with the January 2012 *NCDOT Standard Specifications for Roads and Structures*. The existing bridges shall be removed in accordance with Subarticle 402-2(A) and (B) of the 2012 *Standard Specifications for Roads and Structures*. Red lead paint, if present on the stockpiled (those items identified to be salvaged below) items, need not be removed by the Design-Build Team.

The Design-Build Team shall salvage the helper bents at Bridge No. 770414. The Design-Build Team shall notify the Robeson County Bridge Maintenance Supervisor, Mr. Daniel Leggett at (910) 618-5542 a minimum of 48 hours in advance for coordination of salvaged material pickup. The Design-Build Team shall load the salvaged material for NCDOT's pick up.

At Bridge No. 770026, the Design-Build Team shall remove all remnants from the previous structure.

At Bridge No. 770223, the Design-Build Team shall attempt to pull out the existing piles fully. If this method is not successful, the Design-Build Team may cut the piles off at the mud line.

At Bridge No. 770432, the Design-Build Team shall remove the embedded sheet pile near the south end of the existing bridge.

General:

All bridges shall meet approved roadway typical sections and grades. Bridge geometry (width, length, skew, span arrangement, etc.) shall be in accordance with the approved Preliminary Roadway Plans and approved Hydraulic Bridge Survey Reports prepared by the Design-Build Team.

Design shall be in accordance with the latest edition of AASHTO *LRFD Bridge Design Specifications* (with exceptions noted in the NCDOT *Structures Management Unit Manual)*, NCDOT *Structures Management Unit Manual* (including policy memos), NCDOT *Bridge Policy Manual* and, as applicable, NCDOT *Sub Regional Tier Design Guidelines for Bridge Projects* dated February 2008.

If the NCDOT's Standard Bridge Plans are used, then the Design-Build Team shall analyze and seal the plans.

A live load rating chart for proposed girders shall be included with the bridge plans and shall state design assumptions and methodology used in the load rating calculations. The load rating

shall be in accordance with the NCDOT *Structures Management Unit Manual* (including policy memos) and *AASHTO's Manual for Bridge Evaluation*. If Standard Bridge Plans and the corresponding rating sheets are not used, the Design-Build Team shall submit an initial live load rating chart concurrently with the Preliminary Bridge Survey Report submittal.

Construction and Materials shall be in accordance with 2012 NCDOT *Standard Specifications for Roads and Structures*, NCDOT Structures Management Unit *Project Special Provisions*, and NCDOT Structures Management Unit Standard Drawings.

Alternate designs, details, or construction practices (such as those employed by other states, but not standard practice in NC) are subject to Department review and will be evaluated on a case by case basis.

Once all changes have been incorporated into the "Released for Construction" structure plans for each site, the Design-Build Team shall provide a PDF of the sealed plans to the Design-Build Unit.

NCDOT Information Supplied

The NCDOT Standard Bridge Design Plans are available at:

https://connect.ncdot.gov/resources/Structures/Pages/Standard-Design-Plans.aspx

HYDRAULICS DESIGN SCOPE OF WORK

The Design-Build Team shall be required to do the following:

- Employ a prequalified private engineering firm to perform hydraulic design for all work required under this contract.
- Attend a Hydraulic pre-design meeting prior to the first hydraulic submittal.
- Design the storm drainage using Geopak Drainage.
- Provide a *Stormwater Management Plan* using the most current NCDOT Best Management Practices where applicable.
- Provide Bridge Survey Reports as required by NCDOT Hydraulic Guidelines stated below.
- Design the structure at each location to meet the requirements of the Memorandum of Agreement (MOA) between NCDOT and NC Floodplain Mapping Program (NCFMP) approved August 12, 2016, or as may be amended, for the Department's submittal to FEMA. In the event an MOA cannot be achieved, the Design-Build Team shall be responsible for preparing a CLOMR package; however, the Department will be responsible for all FEMA submittal fees associated with the submittal of a CLOMR, and subsequently LOMR, packages. In the event that the Design-Build Team revises their design after initial submittal of the MOA or CLOMR package and a second FEMA submittal for that bridge is required, then the Design-Build Team will be responsible for all FEMA submittal fees associated with the re-submittal.
- The Department will not allow direct contact between the Design-Build Team and the representatives of NCFMP and their contractors either by phone, e-mail, or in person without the State Hydraulics Engineer or his designee(s) present. The Department will review with NCFMP the eligibility for the MOA at their monthly meeting. The MOA Package with the accepted Bridge Survey Report for each site shall be submitted for review one month prior to the meeting. A member of the Design-Build Team may attend this meeting. The Design-Build Team shall recognize that the MOA allows for as much as one hundred fifty (150) days for approval once an accepted MOA Package has been submitted by the Department to NCFMP. No construction activity shall occur in FEMA regulated floodplains until the MOA package (or CLOMR) for the specific site has been approved by the NCFMP. The Department will be responsible for all fees associated with the submittal of MOA Packages.
    - Construct structures in FEMA regulated floodplains to ensure adherence to the approved FEMA submittal. The Design-Build Team shall ensure that construction of all structures in FEMA regulated floodplains adheres to the approved CLOMR(s) and / or MOA(s). Within three months of completion of a structure in a FEMA regulated floodplain, the Design-Build Team shall provide a sealed As-Built survey for the structure and certify that the constructed structure adheres to the approved CLOMR or MOA. Guidance for As-built plan certification for FEMA-Regulated Stream Crossings may be found on the Hydraulics Unit website at the following address:

https://connect.ncdot.gov/resources/hydro/Pages/FEMA-Interagency-Design.aspx

- The Design-Build Team shall prepare a new FEMA model and / or package and be responsible for all associated costs resulting from any construction variation from the approved CLOMR(s) and / or MOA(s).

- The Department will not provide FEMA models that are available on the North Carolina Flood Risk System (FRIS) website. The Department will provide FEMA models, if available, to the Shortlisted Design Build Teams that are not available on the FRIS website. The Department in no way warrants or implies that these models are complete, accurate, or sufficient. No additional compensation will be provided for additional modeling necessary to correct, re-create, or adjust the models provided.

- Prepare the associated Permit Drawings as described in the *Environmental Permits Scope of Work*. All work resulting from the hydraulics and Permit Drawing reviews shall be the responsibility of the Design-Build Team.

- Design all stormwater controls based upon the most current NCDOT *Stormwater Best Management Practices Toolbox*.

- Design hydraulic spread cannot intrude into the travel lane.

- The 10 foot setbacks on both ends of Bridge Nos. 770432 and 770433 were waived in determining the bridge length.

- The Design-Build Team shall design and construct the replacement of the existing overflow pipes on the northwest and southeast approaches at Bridge No. 770223 with aluminum arch pipes with headwalls.

- Use grated drop inlets with pipes in shoulder berm gutter. Concrete flumes shall be used only if there is inadequate depth for a drop inlet.

- Bent placement limitations shall adhere to the *Structures Scope of Work*. Any variance in bent locations from these limitations will require justification and approval from the Department.

- The Design-Build Team shall provide permanent bank stabilization where the bank is disturbed for bent removal.

- No deck drains are allowed to be installed over water.

General

- Design in accordance with criteria provided in the North Carolina Division of Highways *Sub Regional Tier Guidelines for Bridge Projects* dated February 2008, *Guidelines for Drainage Studies and Hydraulics Design-1999* and the addendum *Handbook of Design for Highway*

Drainage Studies-1973, North Carolina Department of Transportation *Stormwater Best Management Practices Toolbox-2014* and the North Carolina Division of Highways Hydraulics Unit website:

https://connect.ncdot.gov/resources/hydro/pages/default.aspx

Information Supplied

- Memorandum of Agreement (MOA) between NCDOT and NC Floodplain Mapping Program approved August 12, 2016 and associated materials are located at:

  https://connect.ncdot.gov/resources/hydro/Pages/FEMA-Interagency-Design.aspx

- FEMA models are available on the North Carolina Flood Risk System (FRIS) website. NCDOT will provide the FEMA model not available on FRIS website The FRIS website is located at:

  http://fris.ncem.org/fris

- Pre-design Hydraulic Report for each bridge location.

GEOTECHNICAL ENGINEERING SCOPE OF WORK

I. GENERAL:

Obtain the services of a firm prequalified for geotechnical work by the NCDOT Geotechnical Engineering Unit at:

https://partner.ncdot.gov/VendorDirectory/default.html

The prequalified geotechnical firm shall prepare foundation design recommendation reports for use in designing structure foundations and roadway foundations, retaining walls, and temporary structures if necessary.

If the NCDOT's standard bridge plans are used, then the Design-Build Team shall design the foundations and seal the plans.

The Engineer of Record who prepares the foundation design recommendation reports shall be a Professional Engineer registered in the State of North Carolina who has completed a minimum of three geotechnical design projects of scope and complexity similar to that anticipated for this project using the load and resistance factor design (LRFD) method and in accordance with the latest edition of the AASHTO *LRFD Bridge Design Specification*.

The prequalified geotechnical firm shall also determine if additional subsurface information, other than that required and noted elsewhere in this RFP, is required based upon the subsurface information provided by the NCDOT and the final roadway and structure designs. If a determination is made that additional subsurface information is required, the Design-Build Team shall use a prequalified geotechnical firm to perform all additional subsurface investigation and laboratory testing in accordance with the current NCDOT Geotechnical Engineering Unit *Guidelines and Procedures Manual for Subsurface Investigations*. Submit additional information collected by the Design-Build Team to the NCDOT Geotechnical Engineering Unit for review and acceptance in the following format:

- 8 ½ x 11-inch Paper Format
- "Structure Subsurface Investigation Title Sheet." Includes Caution Notice and an area to list Contents.
- NC Division of Highways Geotechnical Engineering Unit Soil and Rock Classification Legend and Abbreviations
- Plan View of boring locations and any other significant topographic features
- gINT boring logs
- gINT core logs (if applicable)
- Cross sections if drilled pier foundations will be used
- AASHTO soil test results for both disturbed and undisturbed samples
- Rock test results summary chart

The Design-Build Team shall provide the final Subsurface Investigation Report in electronic and hardcopy format to the NCDOT for its records.

A minimum of 1 standard penetration test (SPT) / rock core boring shall be required per bent for all bridges. All borings for pile-supported bents must be located within 50 feet of the center of each bent and all borings for bents with drilled pier foundations shall be performed at opposite ends of each bent to satisfy this requirement. No boring may be used for the foundation design of more than one bent. Extend all borings to a depth of 15 feet or four foundation element diameters, whichever is greater, below the foundation element to show a complete subsurface profile. The Department will provide at least 2 borings per bridge site to the Design-Build Team. The Design-Build Team shall be responsible for obtaining the borings noted above for all bents where subsurface information is not sufficient or is warranted by variability in the geology unless the prequalified geotechnical firm submits documented justification that the subsurface investigation provided by the NCDOT is adequate for design purposes and the justification is acceptable to the Department. Any deviations to the requirements noted above shall require acceptance from the NCDOT Geotechnical Engineering Unit prior to construction.

The Design-Build Team is permitted to design bridges on this project using software that accounts for the structural effects of soil / pier interaction.

II. DESCRIPTION OF WORK:

The Design-Build Team shall design foundations, embankments, slopes, and retaining walls in accordance with the current edition of the AASHTO *LRFD Bridge Design Specifications*, NCDOT *LRFD Driven Pile Foundation Design Policy*, *Sub Regional Tier Design Guidelines for Bridge Projects* dated February 2008 as applicable, all applicable NCDOT Geotechnical Engineering Unit Standard Provisions, NCDOT *Structures Management Manual*, and NCDOT *Roadway Design Manual*. The NCDOT *LRFD Driven Pile Foundation Design Policy* is located on the NCDOT Geotechnical Engineering Unit's website at:

https://connect.ncdot.gov/resources/Geological/Pages/default.aspx

For *Geotechnical Guidelines for Design-Build Projects*, the Design-Build Team shall adhere to the guidelines located at the following website:

https://connect.ncdot.gov/letting/Pages/Design-Build-Resources.aspx

A. Structure Foundations

When the weathered rock or rock elevation is below the 100-year hydraulic scour elevation, the 100-year and 500-year design scour elevations are equal to the 100-year and 500-year hydraulic scour elevations from the structure survey report accepted by the NCDOT Hydraulics Unit. When the weathered rock or rock elevation is above the 100-year hydraulic scour elevation, the 100-year design scour elevation may be considered equal to the top of the weathered rock or rock

elevation, whichever is higher, and the 500-year design scour elevation may be set two feet below the 100-year design scour elevation.

End bent slopes shall be 1.5:1 (H:V) or flatter with rip rap slope protection. Place end bent slope protection from the toe of slope to berm to protect the approach embankment from scour.

Analyze deep foundations and pile bents using either LPile or FB-Pier. Design vertical piles with a sufficient embedment in soil and/or rock to achieve "fixity".

B. **Roadway Foundation**

All proposed unreinforced fill and cut slopes shall be 3:1 (H:V) or flatter except bridge end bent slopes (see Section A – Structure Foundations). In areas where a sliver fill is required to tie the proposed grade into the existing ground, fill slopes may be steeper than 3:1 (H:V) provided the existing slopes are stable and erosion control measures are utilized on the sliver fill slopes. However, in no case shall a slope be steeper than 1.5:1. The Design-Build Team shall submit slope stability analysis verifying stability of any modified slopes, including details to control erosion of the slope. For all other proposed slopes steeper than 3:1 (H:V), the slopes shall be reinforced and detailed design calculations shall be submitted to the NCDOT Geotechnical Engineering Unit, via the Design-Build Unit, for review and acceptance.

Bridge approach fills shall be required for end bents on all bridges in accordance with NCDOT Standard Drawings and NCDOT design criteria. Standard Drawing 422.11 of the *NCDOT January 2012 Roadway Standard Drawings* shall be used on all bridges.

III. CONSTRUCTION REQUIREMENTS:

All construction and materials shall be in accordance with the NCDOT 2012 *Standard Specifications for Roads and Structures* and current NCDOT *Project Special Provisions* unless noted otherwise elsewhere in this RFP. The Design-Build Team shall be responsible for investigating, proposing and incorporating remedial measures for any construction problems related to foundations, retaining walls, subgrades, settlement, slopes, and construction vibrations. Submit the proposed remedial measures to the Geotechnical Engineering Unit for review and acceptance prior to incorporation.

The Design-Build Team shall be responsible for any damage or claim caused by construction, including damage caused by vibration (see 2012 *Standard Specifications for Roads and Structures* Article 107-14). The Design-Build Team shall be responsible for deciding what, if any, pre and post-construction monitoring and inventories need to be conducted to satisfy their liability concerns. Any monitoring and inventory work shall be performed by a qualified private engineering firm experienced in the effects of construction on existing structures.

The prequalified geotechnical firm that prepared the original foundation designs shall perform any changes to the foundation designs. All changes shall be based upon additional information, subsurface investigation and / or testing. Send copies of revised designs, including additional subsurface information, calculations and any other supporting documentation sealed by a professional engineer registered in the State of North Carolina, to the NCDOT for review and acceptance.

The geotechnical firm that prepared the foundation designs shall review and approve all pile driving hammers. After the geotechnical firm has approved these submittals, the Design-Build Team shall submit to the NCDOT for review prior to beginning construction.

Perform hammer approvals with GRLWEAP Version 2002 or later and in accordance with the NCDOT LRFD Driven Pile Foundation Design Policy. Provide pile driving inspection charts or tables for all approved pile hammers.

Limit driving stresses in accordance with the AASHTO LRFD *Bridge Design Specifications*. If a tip elevation is noted on the plans, drive piles to the minimum required driving resistance and tip elevation.

The minimum required driving resistance is equal to the factored resistance noted on the plans divided by a resistance factor plus any additional resistance for downdrag and scour if applicable. When performing PDA testing in accordance with the NCDOT LRFD Driven Pile Foundation Design Policy, the resistance factor is 0.75. Otherwise, the resistance factor for the wave equation analysis is 0.60.

Otherwise, drive piles to the minimum required driving resistance and a penetration into natural ground or below design scour of at least 10 ft. If a pile is socketed into rock at least 5 feet and all other design requirements are met then the total penetration amount may be relaxed at the discretion of the Geotechnical Engineering Unit. Unless otherwise approved, stop driving piles when refusal is reached. Refusal is defined as 240 blows per foot or any equivalent set.

PDA testing is required when the proposed Required Driving Resistance of HP12x53 piles exceeds 175 tons, the proposed Required Driving Resistance of HP14x73 piles exceed 250 tons, or if a pile type other than HP 12x53 or HP 14x73 is used. If required, perform Pile Driving Analyzer (PDA) testing on at least one pile per bridge using a NCDOT prequalified company to develop pile driving inspection charts or tables. Additional PDA tests may be required based upon the AASHTO LFRD Bridge Design Specifications. Provide additional PDA testing for any revisions to pile type, size or hammer previously approved. The locations of specific piles to be tested must be accepted by the NCDOT prior to any PDA test. Perform PDA tests in accordance with ASTM D 4945-89, Standard Test Method for High Strain Dynamic Testing of Piles and this scope of work.

Analyze data with the Case Pile Wave Analysis Program (CAPWAP), version 2006 or later. At a minimum, analysis is required for a hammer blow near the end of initial drive

and for each restrike and redrive. Additional CAPWAP analysis may be required as determined by the Engineer.

Meet the guidelines for NCDOT PDA reports from the Geotechnical Engineering Testing Contract for PDA test reports. To obtain a list of pre-approved Geotechnical Engineering Testing Contract companies to perform PDA testing and guidelines for PDA test report, contact the Geotechnical Engineering Unit at 919-707-6850. PDA testing shall be performed in accordance with Section 450 of the Standard Specifications. Submit a complete PDA report sealed by the professional engineer who performed the test to the foundation design firm. The foundation design firm shall develop pile driving inspection charts or tables for acceptance by the NCDOT prior to pile installation.

Send copies of any inspection forms related to foundations, embankment, and subgrade to the NCDOT for review.

PAVEMENT MANAGEMENT SCOPE OF WORK

The pavement design for the mainline and mainline shoulders is as follows:

Bridge Site	Surface	Intermediate	Base
770026	3.0” SF9.5A	-	4.0” B25.0B
770223	3.0” SF9.5A	-	4.5” B25.0B
770413	3.0” SF9.5A	-	4.0” B25.0B
770414	3.0” SF9.5A	-	4.0” B25.0B
770432	3.0” SF9.5A	-	4.0” B25.0B
770433	3.0” SF9.5A	-	4.0” B25.0B

The minimum depth for overlaying the existing pavement shall be equal to the full thickness of surface course as provided in the table above.

The depth of surface course on cored slabs at the gutter line shall meet the minimums listed in the Structures Management Unit Manual.

If wedging is equal to or greater than the full thickness of the surface course as provided in the table above plus 3.0”, then wedging shall consist of the full thickness of surface course as provided in the table above, and the remainder shall be B25.0B.

The Design-Build Team shall provide incidental milling where tying to the existing pavement to provide a smooth transition to the proposed pavement. The Design-Build Team shall provide a minimum milling depth no less than the first layer of surface course.

Driveways impacted by the Design-Build Team’s construction shall be repaired to the pre-construction condition.

TRAFFIC ENGINEERING SCOPE OF WORK

I. TRAFFIC MANAGEMENT PLANS

A. DESIGN PARAMETERS FOR ROAD CLOSURES

1. All bridges will be constructed under road closure with utilization of off-site detours as noted below. Local access to all residences and businesses will be maintained between the closure points at all times during construction

County	Structure No.	Route	Detour Route
Robeson	770026	SR 1955	SR 1935 – SR 1005
Robeson	770413 & 770414	SR 1323	NC 211 – SR 1324 – SR 1325
Robeson	770223	SR 1303	SR 1339 – SR 1352 – SR 1312
Robeson	770432	SR 1157	US 74 Alt – SR 1003
Robeson	770433	SR 1160	SR 1003 – SR 1159

2. Improvements to the above stated detour route will not be required. In the event the Design-Build Team proposes any deviations/improvements to the above stated detour route, it shall be the sole responsibility of the Design-Build Team to obtain approval from the NCDOT Division Engineer and perform all required environmental studies and obtain environmental permits for any proposed changes.

3. Design and prepare the Temporary Traffic Control Plan for each bridge site location project. Development of the Traffic Control Plan should proceed as follows:

   a) Submit a Traffic Control Plan to the Resident Engineer and the Design-Build Unit for review and acceptance. Construction may begin once the Traffic Control Plan has been sealed by the Design-Build Team and accepted by the Department.

   b) The Traffic Control Plan shall include a detour detail, which includes detour signing (detour advance warning & trailblazing with road names), sign designs, and locations of traffic control devices; construction phasing/sequence, and project notes. Street names are required on detour signing. NCDOT's *January 2012* Roadway Standard Drawings Section 1100 is for traffic control and will need to be incorporated into the plans for most work activities. The detour detail will incorporate NCDOT's *January 2012* Roadway Standard Drawing 1101.03, sheet 1 of 9. Ensure the development of the Traffic Control Plan is in compliance with the North Carolina Department of Transportation Roadway Standard Drawings, NCDOT *January 2012 Standard Specifications for Roads and Structures*, the latest edition of the *Manual on Uniform Traffic Control Devices (M.U.T.C.D.)* and the *NCDOT Standard Specifications for Roads and Structures* (January 2012).

c) Use traffic control devices that conform to all NCDOT requirements and are listed on the Department's Approved Products List as shown on NCDOT's Traffic Control Website.

d) The NCDOT's Traffic Control Website should be utilized when developing the Traffic Control Plan. The Traffic Control Website is updated and provides key information necessary in preparing the Traffic Control Plan. The Traffic Control Website Address:

https://connect.ncdot.gov/projects/WZTC/Pages/default.aspx

B. PROJECT REQUIREMENTS FOR ALL BRIDGE SITES

1. The Design-Build Team shall select a Private Engineering Firm (PEF) that has experience designing and sealing Traffic Management Plans for the North Carolina Department of Transportation (NCDOT) on comparable projects.

2. The Traffic Management Plans shall adhere to the *"Express Design-Build Bridge Replacement Submittal Guidelines–Year 5, March 24, 2016",* and the *"Guidelines for Preparation of Traffic Control and Pavement Marking Plans for Design-Build Projects", January 2012 NCDOT Roadway Standard Drawings, January 2012 Standard Specifications for Roads and Structures*, and the "*Manual for Uniform Traffic Control Devices"*.

3. Adapt the traffic control plans, when directed by the engineer, to meet field conditions to provide safe and efficient traffic movement. Changes may be required when physical dimensions in the detail drawings, standard details and roadway details are not attainable or result in duplicate or undesired overlapping of devices. Modification may include: moving, supplementing, covering or removal of devices.

4. The Design-Build Team shall provide one month notice to the Engineer, County EMS and County school officials prior to road closures.

5. Except for bridges on new alignment, the Design-Build Team will be allowed five additional days of lane closure per bridge site to complete punch list items identified by the Engineer. The Design-Build Team shall notify the Engineer 15 days prior to installation of a lane closure and submit details for approval by the Engineer.

6. Except for bridges on new alignment, as approved by the Engineer, lane closures will be allowed for geotechnical borings and the relocation of utilities prior to the road closure at each bridge site.

C. DETOUR SIGNING

The Design-Build Team shall be responsible for the installation and maintenance of all detour signing within and off the project limits.

Cover or remove all detour signs within and off the project limits when a detour is not in operation.

Ensure all necessary signing is in place prior to altering any traffic pattern.

D. TRAFFIC BARRIER

The Department will not provide any type of barrier for this project. The Design-Build Team shall use only an NCDOT approved temporary traffic barrier system and adhere to the following requirements.

Install temporary traffic barrier system a maximum of two (2) weeks prior to beginning work in any location. Once the temporary traffic barrier system is installed at any location, proceed in a continuous manner to complete the proposed work in that location.

Once the temporary traffic barrier system is installed and no work has been or will be performed behind the temporary traffic barrier system for a period longer than two (2) months, remove/reset the temporary traffic barrier system unless the barrier is protecting a hazard.

Protect the approach end of temporary traffic barrier system at all times during the installation and removal of the barrier by either a truck mounted impact attenuator (maximum 72 hours) or a temporary crash cushion.

Protect the approach end of temporary traffic barrier system from oncoming traffic at all times by a temporary crash cushion unless the approach end of temporary traffic barrier system is offset from oncoming traffic as follows:

Posted speed limit (MPH)	Minimum offset (feet)
40 or less	15
45 – 50	20
55	25
60 mph or higher	30

Install temporary traffic barrier system with the traffic flow, beginning with the upstream side of traffic. Remove the temporary traffic barrier system against the traffic flow, beginning with the downstream side of traffic.

Install drums to close or keep closed tangent sections of the roadway until the temporary traffic barrier system can be placed or after the temporary barrier system has been

removed. The distance, in feet, between drums shall be no greater than twice the posted speed limit (MPH).

The Design-Build Team shall be responsible for providing proper connection between the existing bridge rail and the temporary barrier system and include this information in the appropriate plans.

E. TRAFFIC CONTROL DEVICES

The Design-Build Team shall use traffic control devices that conform to all NCDOT requirements and are listed on the Approved Products List. The Approved Products List is shown on NCDOT's Work Zone Traffic Control website at:

https://apps.dot.state.nc.us/vendor/approvedproducts/

The use of any devices that are not shown on the Approved Product List shall require written approval from the Design-Build Unit.

Place Type III barricades, with "ROAD CLOSED" sign R11-2 attached, of sufficient length to close the entire roadway. Stagger or overlap barricades to allow for ingress or egress.

II. PERMANENT SIGNING

The Design-Build Team will replace any existing signs damaged by construction operations. The signs shall be furnished and installed by the Design-Build Team according to NCDOT's specifications.

III. FINAL PAVEMENT MARKING PLANS

General

Prepare Final Pavement Marking Plans in accordance with the latest *Manual on Uniform Traffic Control Devices (MUTCD)* and the NCDOT *January 2012 Roadway Standard Drawings*.

Final Pavement Marking Plan Requirements

Develop Pavement Marking Plans that maintain all types of traffic (motorists, bicyclists, and pedestrians within the highway, including persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA), Title II, Paragraph 35.130) as defined by the *Manual for Uniform Traffic Control Devices (MUTCD).*

NCDOT's *January 2012 Roadway Standard Drawings* – Section 1200 pertain to pavement markings and markers and shall be utilized.

Use pavement marking and pavement marker products that conform to all NCDOT's requirements and specifications and are listed on the Department's Approved Products List. The use of any devices that are not shown on the Approved Product List shall require written approval from the Signing and Delineation Unit.

Install pavement markings in accordance with NCDOT's *January 2012 Standard Specifications for Roads and Structures,* and in accordance with the manufacturer's procedures and specifications.

Install pavement markings on the final surface as follows:

Bridge #	**Marking**	**Marker**
All Bridges	Paint	Raised

Tie proposed pavement marking lines to existing pavement marking lines.

Replace any pavement markings that have been damaged by the end of each day's operation.

Remove any conflicting markings or markers before shifting traffic to a new pattern.

Passing zone(s) will be determined in the field and must be approved by the engineer.

ENVIRONMENTAL PERMITS SCOPE OF WORK

General

The Design-Build Team shall be responsible for preparing permit drawings necessary for the Department to obtain all required environmental permits for construction for each bridge site contained in this contract. The Design-Build Team is responsible for determining the appropriate permits that will apply to each site. The Design-Build Team is encouraged to gain the Department's concurrence on the permits needed prior to beginning permit application work for each bridge. The Design-Build Team shall determine the schedule for submission of each bridge's permit documentation.

The Design-Build Team shall not begin ground-disturbing activities, including utility relocations in jurisdictional areas, at a given bridge site, until the environmental permits have been issued for that bridge. This restriction does not include investigative borings covered under a Nationwide #6 permit (NWP #6).

The Design-Build Team may begin utility relocation work prior to obtaining the aforementioned permits provided that (1) the Department is notified in writing prior to these activities; (2) such activities are outside jurisdictional resources. Upon consultation with the Division Environmental Officer, a meeting may be required with the permitting agencies prior to beginning work.

The Department will allow no direct contact between the Design-Build Team and representatives of the environmental agencies. No contact between the Design-Build Team and the environmental agencies shall be allowed either by phone, e-mail or in person, without representatives of the Division's Environmental Officer present. A representative from the Design-Build Unit shall be included on all correspondence.

Once the Department has obtained the applicable permits based upon the approved Design-Build Team's proposed design and/or construction methods, the Design-Build Team will be responsible for any change in the proposed design and/or construction methods that nullifies any permit. The Department shall not allow any contract time extensions associated with this additional coordination.

The Design-Build Team shall meet all permit conditions. The Design-Build Team shall be required to staff any personnel necessary to provide permit compliance.

Permit Process

It is the Design-Build Team's responsibility to acquire information and prepare permit drawings that reflect the impacts and minimization efforts from the project as designed by the Design-Build Team. The Design-Build Team shall prepare the entire permit package; the Department will provide the environment document for each bridge site. The Design-Build Team shall be responsible for entering impact determinations on the drawings. Further, it is the Design-Build Team's responsibility to provide the design and construction details to the Department to be

included as part of the permit process. At a minimum, the associated permit drawings shall consist of the following:

- Roadway Plan and Profile Sheets (half size 11" x 17") shall contain all environmental impacts in a table with calculated proposed stream/wetland/open water impacts, buffer impacts by type, such as road fill, bridging, etc.
- In addition, the Roadway Plan Sheet shall specifically identify buffer zones, wetland boundaries, all erosion control measures, structures, pier locations, riprap, causeways and other impacts including utility relocation.

The Department will re-verify and update, as needed, the required environmental data that expires prior to the completion of the activity causing the impact in the jurisdictional areas. These include, but are not limited to, federally protected species, re-verification of wetland jurisdictional areas, historic and archaeological sites, and 303d (impaired) streams.

Direct coordination between the Design-Build Team, the Department's Design-Build Unit, Division Environmental Officer (DEO), Division Bridge Program Manager and the Resident Engineer shall be necessary to ensure proper permit drawing development. Upon completion of the permit drawings, the Design-Build Team shall concurrently forward the package to the Design-Build Unit, Resident Engineer, Division Bridge Program Manager, Division Environmental Officer, Area Bridge Construction Engineer and Hydraulics Unit for review and approval. After all revisions are complete, the Department will subsequently forward the package to the appropriate agencies and the cover letter describing the project.

Any temporary construction measures, including de-watering, construction access, etc. shall be addressed in the permit drawings. Impacts that result from so-called temporary measures may not be judged to be temporary impacts by the agencies. These issues shall be addressed and resolved with the agencies and reviewed by the Division Environmental Officer prior to submission of the permit drawings and environmental impacts to the respective agencies.

The Design-Build Team shall clearly indicate the location of utility relocations in jurisdictional areas. The Design-Build Team shall also identify all proposed borrow and waste sites. Further, the Design-Build Team shall describe the methods of construction of all structures. The description of the temporary impacts (utility relocations, etc.) shall include restoration plans, schedules and disposal plans. This information shall be included in the permit drawings and environmental impacts.

The NCDOT hereby commits to ensuring, to the greatest extent possible, that the footprint of the impacts in areas under the jurisdiction of the federal Clean Water Act will not be increased during the Design-Build effort. All fill material shall be immediately stabilized and maintained to prevent sediment from entering adjacent waters or wetlands. The Design-Build Team shall be responsible for ensuring that the design and construction of the project will not impair the movement of aquatic life.

Requests made for modifications to the permits obtained by the Division Environmental Officer shall only be allowed if the Engineer determines it to be in the best interest of the Department

and will be strongly discouraged. The Design-Build Team shall not take an iterative approach to hydraulic design issues. The design shall be complete prior to permit modification application.

Permit Timeframe

The Design-Build Team should expect it to take up to 60 days for the Department to acquire the permits necessary for each bridge. The 60 days shall begin at the date that the Department has approved the final permit package as submitted by the Design-Build Team. No requests for additional contract time or compensation will be allowed if the permits are obtained within this 60-day period. With the exception of location and survey work and permitted investigative borings covered under a Nationwide #6, no mobilization of men, materials, or equipment for site investigation or construction of the project shall occur prior to obtaining the permits. This limitation does not preclude the off-site fabrication of bridge segments or equipment. The Department will not honor any requests for additional contract time or compensation, including idle equipment or mobilization or demobilization costs, for the Design-Build Team mobilizing men, materials (or ordering materials), or equipment prior to obtaining all permits. The Department will consider requests for contract time extensions for obtaining the permits only if the Design-Build Team has pursued the work with due diligence, the delay is beyond the Team's control, and the 60-day period has been exceeded. If time were granted it would be only for that time exceeding the 60-day period.

Commitments

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize impacts to wetlands, streams, open water, and regulated riparian buffers. Additionally, the NCDOT will provide full compensatory mitigation of all stream, wetland, and riparian buffer impacts as required by the regulatory agencies.

All work by the Design-Build Team must be accomplished in strict compliance with the plans submitted and approved for the permits drawings and in compliance with all conditions of the permits received and certifications issued by the agencies. The Design-Build Team shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of the permits.

The Design-Build Team shall strictly adhere to these commitments, as well as others, including but not limited to requirements for permitting.

If the Design-Build Team discovers any previously unknown historic or archeological remains while accomplishing the authorized work, he shall immediately notify NCDOT Staff Archaeologist and/or Division Environmental Officer, as listed below, who will initiate the required State/Federal coordination. All questions regarding these sites should be addressed to Mr. Matthew Wilkerson, NCDOT Archaeology (919) 707-6089, or the Division Environmental Officer.

EROSION AND SEDIMENTATION CONTROL SCOPE OF WORK

The NCDOT Roadside Environmental Unit (REU) shall review and accept all Erosion and Sedimentation Control Plans. Erosion Control (EC) Plans shall be designed for the grading phase of the construction. Release for Construction (RFC) Erosion Control Plans shall be submitted to all NCDOT Personnel listed in the "*Express Design-Build Bridge Replacement Submittal Guidelines – Year 5, March 24, 2016*", before **any** land disturbing activities, including clearing and grubbing can commence. No land disturbing activities, including clearing and grubbing, shall occur in any location that does not have accepted RFC Erosion Control Plans. Refer to the most recent version of the *NCDENR - Erosion and Sediment Control Planning and Design Manual* for erosion control design guidelines not addressed in this Scope of Work.

The Design-Build Team shall be responsible for determining the Bridge Projects located in Environmentally Sensitive Areas and use the higher Peak Inflow Rate and Peak Rainfall Data (25 year).

Erosion and Sedimentation Control Plans shall at a minimum address the following:

I. Complete Set of Plans

A. RFC Plans

1. The EC plans shall contain a Clearing & Grubbing and Final Grade phase of erosion control design as directed.
2. Use correct NCDOT symbology.
3. Protect existing and proposed drainage structure inlets with Rock Inlet Sediment Trap Type 'A' (RIST-A), Rock Inlet Sediment Trap Type 'C' (RIST-C), Rock Pipe Inlet Sediment Trap Type 'A' (PIST-A), etc.
4. Utilize adequate perimeter controls (temporary silt ditch (TSD), temporary silt fence (TSF), etc.)
5. Utilize infiltration basins, skimmer basins and rock measures with sediment control stone (Temporary Rock Sediment Dam Type 'B' (TRSD-B), Temporary Rock Silt Check Type 'A' (TRSC-A), etc.) at all drainage outlets with a spillway with an adequately designed base length to distribute outflow.
6. Take into account existing topography and show contour lines.
7. Utilize Temporary Rock Silt Checks Type 'B' (TRSC-B) and wattles to reduce velocity in existing and proposed ditches with spacing of 250 feet divided by percentage of ditch grade. Also utilize TRSC-B's in proposed TSD's and temporary diversions (TD).
8. Protect existing streams; do not place erosion control devices in live streams.
9. Sediment basins shall be sized to provide adequate silt storage of 3600 cubic feet per disturbed acre with surface area equal to 435 square feet per cubic foot per second (cfs) of the peak inflow rate, Q10 or Q25, using 10-year or 25-year peak rainfall data (*NCDENR - Erosion and Sediment Control Planning and Design Manual* or NOAA's National Weather Service web site http://hdsc.nws.noaa.gov/hdsc/pfds/orb/nc_pfds.html for partial duration (ARI) time

series type). A Sediment Basin Designer Spreadsheet will be provided by the NCDOT REU upon request.

10. Infiltration Basins shall provide adequate silt storage for 1800 cubic feet per disturbed acre with surface area equal to 325 square feet per cubic foot per second (cfs) of the peak inflow rate, Q10 or Q25, using the 10-year or 25-year peak rainfall data (*NCDENR - Erosion and Sediment Control Planning and Design Manual* or NOAA's National Weather Service web site http://hdsc.nws.noaa.gov/hdsc/pfds/orb/nc_pfds.html for partial duration (ARI) time series type). Infiltration Basin shall be designed to dewater in 3 days or less. An Infiltration Basin Designer Spreadsheet will be provided by the NCDOT REU upon request.
11. Skimmer Basins shall provide adequate silt storage for 1800 cubic feet per disturbed acre with surface area equal to 325 square feet per cubic foot per second (cfs) of the peak inflow rate, Q10 or Q25, using the 10-year or 25-year peak rainfall data (*NCDENR - Erosion and Sediment Control Planning and Design Manual* or NOAA's National Weather Service web site http://hdsc.nws.noaa.gov/hdsc/pfds/orb/nc_pfds.html for partial duration (ARI) time series type). A Skimmer Basin Designer Spreadsheet will be provided by the NCDOT REU upon request.
12. The minimum and maximum length to width ratio of all Sediment Basins shall be 2:1 and 6:1, respectively.
13. Coir Fiber Baffles shall be installed in all silt basins and sediment dams at drainage outlets. For silt basins with a 20-foot or longer length, three Coir Fiber Baffles shall be installed with a spacing of 1/4 the basin length. For silt basins with a length less than 20 feet, a minimum of two Coir Fiber Baffles shall be installed, with a spacing of 1/3 the basin length. The Design-Build Team will not be required to show the individual baffles on the EC Plans.
14. Include any culvert and / or pipe construction sequence plan sheets in the Clearing & Grubbing Erosion Control Plans; all pipes 48" or larger, or any combination of pipes that total 48" or more require a construction sequence. Prior to installation of pipes smaller than 48 inches in jurisdictional areas, the Design Build Team shall submit a phasing plan for managing the watercourse to the Resident Engineer for review and acceptance. The phasing plan shall be in accordance with the Best Management Practices for Construction and Maintenance Activities.
15. For any permanent stormwater devices, design temporary sediment basins at these locations for construction phase.
16. Utilize Wattles with Polyacrylamide (PAM) in temporary and permanent, existing and proposed ditches at a spacing of 50 ft. in areas where sediment basins are not feasible at drainage outlets, and in areas where sediment basins at drainage outlets cannot be properly sized to surface area and/or sediment storage requirements due to safety concerns, ROW limitations, utility conflicts, or other construction limitations approved by the NCDOT REU. For ditch grades greater than 3%, utilize TRSC-A with Matting and PAM in lieu of wattles.
17. Utilize temporary slope drains and earth berms at top of fill slopes 8 feet (5 feet in Divisions 1, 2, 3, and 6) or higher and steeper than 4:1, or where there are

superelevations above 0.04 and fills are greater than 5 feet (3 feet in Division 1, 2, 3, and 6). Maximum slope drain spacing shall be 200 feet.

18. Utilize rock energy dissipater and / or silt basin at outlet of slope drain.
19. Provide matting for erosion control in all ditch lines where the velocity is greater than 2.0 ft./s, and the shear stress is 1.55 psf or less. For ditch lines with a shear stress above 1.55 psf, Permanent Soil Reinforcement Mat or Riprap shall be utilized.
20. Provide matting for erosion control on all fill slopes 2:1 or steeper and fill slopes adjacent to sensitive jurisdictional areas.
21. For bridge projects with Design Standards in Sensitive Watersheds (15A NCAC 04B .0124) commitment, all streams and unnamed tributaries shall have a 50-foot Environmentally Sensitive Area (ESA) on Clearing & Grubbing EC Plans only, and utilize 25-year peak rainfall data for surface area requirement for all sediment basins.
22. To contain concrete waste water and associated concrete mix from washing out ready-mix trucks, drum, pumps, or other equipment, provide Concrete Washout Structures at egress points. Concrete Washout Structures must collect and retain all concrete waste water and solids so that this material does not migrate to surface waters or into the ground water. The Concrete Washout Structures are not intended for concrete waste water not associated with washout operations. The Concrete Washout Structures may include devices above or below ground and/or commercially available devices designed specifically to capture concrete waste water. Concrete Washout Structure options may be found in the special provisions, available at the website noted in Section IV. A Concrete Washout Structure option detail is available at the following link:

    http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/soil_water/pdf/ConcreteWashoutStructuresdetail.pdf

B. Intermediate Phase

Intermediate Erosion Control Plans shall only be required if design modifications and / or site conditions require additional erosion control design or design revisions to the RFC Erosion Control Plans. Intermediate Plans shall be submitted for review and shall be accepted prior to construction of any aspect impacted by the revised erosion control design. For any intermediate phase, comply with Section A, “RFC Plans” above.

C. The following documents shall accompany the Erosion Control Plans and be completed and submitted to NCDOT REU for initial submittal:

1. High Quality Water Worksheet from Soil and Water Engineering web page
2. Low Impact Bridge Project Checklist from Soil and Water Engineering web page
3. Matting Determination Spreadsheet from Soil and Water Engineering web page
4. Erosion Control Quantities Spreadsheet from Soil and Water Engineering web page
5. Basin or Checkdam Design Spreadsheets from Soil and Water Engineering web page
6. Preliminary Permit Drawings showing all jurisdictional stream and wetland impacts (half-size)
7. General Structure Drawing with locations of piles, drilled shafts, etc. (half-size)

8. Erosion Control Plans shall be submitted according to the "*Express Design-Build Bridge Replacement Submittal Guidelines – Year 5, March 24, 2016*".
9. Microstation files may be requested by NCDOT REU staff if needed

The documents located on the Soil and Water Engineering web page can be found at:

http://stage.dot.state.nc.us/doh/operations/dp_chief_eng/roadside/soil_water/erosion_control/downloads.html

All documents from the Soil and Water Engineering web page can be submitted electronically or hard copy.

II. Detail Sheets and Notes

A. Provide project specific special notes and details such as wattle with PAM, etc.
B. Provide matting summary sheet(s): matting for erosion control and permanent soil reinforcement mat.
C. Provide reforestation sheet(s): regular, wetland, streambank and / or buffer showing appropriate species.

III. Title Sheet

A. Show correct notes: HQW, ESA, clearing and grubbing, etc.
B. Show correct standards for project.
C. Show list of standard NCDOT symbology
D. Show name and certification number of Level III certified individual responsible for designing and/or reviewing Erosion and Sedimentation Control Plans.

IV. Special Provisions

A. Erosion Control Special Provisions are available at the following website:

http://www.ncdot.org/doh/operations/dp_chief_eng/roadside/soil_water/special_provisions/

B. References in Erosion Control Special Provisions from the aforementioned website to Method of Measurement, Basis of Payment, or any other statement regarding direct payment for Erosion & Sediment Control measures shall be disregarded.
C. Erosion Control / Stormwater Certification found elsewhere in this RFP.

V. Miscellaneous

A. Plan submittals shall include all pertinent design information required for review, such as design calculations, drainage areas, etc.
B. The NCDOT REU will provide a sample set of Erosion and Sedimentation Control Plans (including any special details or special provisions used by the NCDOT REU) and MicroStation Erosion Control Workspace to the Design-Build Team for reference upon request.
C. Plans shall address any environmental issues raised during the permitting process.
D. Sufficient time shall be allowed for the Design-Build Team to make any changes to the Erosion and Sedimentation Control Plans deemed necessary by the NCDOT REU.

E. Temporary access and haul roads, other than public roads, constructed or used in connection with the project shall be considered a part of the project and addressed in the Erosion and Sedimentation Control Plans.
F. Borrow or waste areas that are part of the project shall require a separate Reclamation Plan, unless the borrow or waste activity is regulated under the *Mining Act of 1971*, or is a landfill regulated by the Division of Waste Management (DWM). The Design-Build Team shall submit the permit number for waste / borrow sites covered by the Mining Act or regulated by DWM (NCDEQ) concurrently to the Design-Build Unit and the Resident Engineer. For Reclamation Procedures, see:

http://www.ncdot.org/doh/operations/dp_chief_eng/roadside/fieldops/downloads/Files/ContractedReclamationProcedures.pdf

G. Whenever the Engineer determines that significant erosion and sedimentation continues despite the installation of approved protective practices, the Design-Build Team shall be required to and shall take additional protective action.
H. An accepted Erosion and Sedimentation Control Plan does not exempt the Design-Build Team from making every effort to contain sediment onsite.
I. Any Erosion Control Design revisions made during the construction of the project shall be submitted to NCDOT REU by the 15th of the month via the Design-Build Unit. At any time requested by the Engineer or the NCDOT-REU, the Design-Build Team shall provide an updated version of the Erosion and Sedimentation Control Plans for distribution to all parties involved in the construction process.
J. The Design-Build Team shall comply with the *North Carolina Administrative Code Title 15 A Department of Environment and Natural Resources Chapter 4, Sediment Control*.
K. A pre-design meeting shall take place between the NCDOT REU Soil & Water Engineering Section, the Design Build Team, and any other pertinent NCDOT personnel before any Erosion and Sedimentation Control Designs are submitted to NCDOT REU. Erosion and Sedimentation Control Plan submittals shall only be reviewed and accepted by NCDOT REU after the Erosion Control Pre-Design Meeting. The Design Build Team shall be required to submit a tentative Erosion and Sedimentation Control Plan submittal schedule at the pre-design meeting.
L. At minimum, the Design Build Team shall bring one erosion control plan sheet with a Clearing & Grubbing erosion control design to the Erosion and Sedimentation Control Plan pre-design meeting.
M. All RFC Erosion and Sedimentation Control Plans, including any red line revisions, shall be kept on site at all times throughout the duration of the project.
N. Erosion Control / Stormwater Certification shall be required according to the Project Special Provision found elsewhere in this RFP.
O. Prior to installation of any erosion control devices, the Design-Build Team shall verify boundaries of jurisdictional areas in the field and delineated with Safety Fence or flagging. For guidance on Safety Fence and flagging in jurisdictional areas, see:

http://www.ncdot.org/doh/operations/dp_chief_eng/roadside/fieldops/downloads/

P. Various projects that impact more than 100 linear feet of stream with a Division of Water Resources (DWR) Classification of Trout (Tr) may require a Trout Buffer Variance from the Regional Land Quality Section office or from the central Land Quality Section office in Raleigh. Additional coordination and document preparation with NCDOT REU and Land Quality may be required to obtain this variance approval. These projects will be identified at the erosion control pre-design meeting.

Q. Sediment basins that drain directly into jurisdictional water or have a total drainage area of one acre or more shall be designed and constructed with outlet structures that only withdraw water from the surface. For sediment basins that do not drain directly into jurisdictional water or have less than one acre of total drainage area, surface dewatering outlets and stone outlets may be provided.

R. Ground cover stabilization shall comply with the timeframe guidelines specified by the North Carolina Department of Environment and Natural Resources Division of Water Quality NCG-010000 General Construction Permit that became effective on August 3, 2011. Excluding the slopes noted below, temporary and permanent ground cover stabilization shall be provided within seven calendar days from the last land-disturbing activity. The Design-Build Team shall label all slopes subject to the seven-day ground cover stabilization requirements on all Erosion and Sedimentation Control Plans submitted to the Department for review and acceptance.

For the slopes noted below, temporary and permanent ground cover stabilization shall be provided within 14 calendar days from the last land-disturbing activity:

Slopes between 2:1 and 3:1, with a slope length of ten feet or less
Slopes 3:1 or flatter, with a slope length of 50 feet or less
Slopes 4:1 or flatter

Temporary and permanent ground cover stabilization shall be provided in accordance with the provisions in this contract and as directed.

EROSION CONTROL DAMAGES:

The Design-Build Team shall take all reasonable precautions to comply with all regulations of all authorities having jurisdiction over public and private land governing the protection of erosion and sedimentation. Any fines, remediation required or charges levied against the Department for failing to comply with all rules and regulations concerning erosion and sediment control, due to the Design-Build Team's negligence, carelessness, or failure to implement the Erosion and Sedimentation Control Plans and Specifications; or failure to maintain an approved Storm Water Pollution Prevention Plan (SWPPP), regardless of absence of neglect, shall be deducted from monies due the Design-Build Team. In addition to said fines, remediation required, or charges levied, any associated engineering costs or actions taken by the Department in order for the Department to comply with rules and regulations, as a result of the Design-Build Team's negligence, carelessness, or failure to implement the Erosion and Sedimentation Control Plans and Specifications; and / or the SWPPP, regardless of absence of neglect, shall be deducted from the monies due to the Design-Build Team.

UTILITIES COORDINATION SCOPE OF WORK

The Design-Build Team shall obtain the services of a Private Services Firm (PSF) knowledgeable in the NCDOT Utility Coordination Process involved with utility relocation / installation and highway construction. The Design-Build Team shall be responsible for coordinating all utility relocations, removals, and / or adjustments where the Design-Build Team and Utility Company, with concurrence from the Department, determine that such work is essential for highway safety and performance of the required highway construction. Coordination shall be for all utilities whether or not they are specifically identified in this scope of work and shall include any necessary utility agreements when applicable. NCDOT will be the approving authority for all utility agreements and approval of plans.

The Design-Build Team shall be responsible for verifying the utility locations, type of facilities, and identifying the utility owners in order to coordinate the relocation of any utilities, known and unknown, in conflict with the project.

After all utility conflicts have been identified by the Design-Build Team at a bridge site, if requested by the Design-Build Team, the Department will write a letter to the affected utility owners introducing the project to the owners and requesting their cooperation with the Design-Build Team to adjust utilities in a timely manner.

Cost Responsibility

The Design-Build Team shall be responsible for relocating water and sewer facilities that have prior rights or other compensable interest; however the cost of relocating these facilities, as well as any necessary design and permitting for these utilities, will be paid for as Extra Work in accordance with Article 104-8(A) of the Standard Specifications. The NCDOT will be responsible for all other non-betterment utility relocation costs when the utility company has prior rights of way / compensable interest. The utility company shall be responsible for the relocation costs if they can not furnish evidence of prior rights of way or a compensable interest in their facilities. The Design-Build Team shall be responsible for determining the cost responsibility for the utility relocations. The Design-Build Team shall be responsible for all costs associated with utility relocations due to haul roads and / or any other temporary conditions resulting from the Design-Build Team’s methods of operation or sequence of work.

Water and Sewer

If the Design-Build Team's design and / or construction require the relocation of existing water or sewer facilities, designs shall be coordinated with the NCDOT Utilities Unit. The Design-Build Team shall develop designs; prepare all plans for needed agreements and permits; submit permits directly to the agencies and obtain approval from the agencies.

Designs shall be coordinated with the NCDOT Utilities Unit. The Design-Build Team shall be responsible for submitting electronically the set (half size and full size plans in pdf format) of utility construction drawings to the State Utilities Manager, via the Design-Build Unit, for further handling. Each set shall include a title sheet, plan sheets, profiles and special provisions

if required. Once approved by the State Utilities Manager, the Design Build Team will submit the plans to the agencies to obtain approval.

The relocation of all water and sewer facilities shall be done in accordance with the NCDOT policies and the latest water and sewer design requirements / specifications of the appropriate Utility Owner. In the event of conflicting design parameters in the requirements noted above, the proposed design shall adhere to the most conservative values. The Design-Build Team may obtain the design requirements / specifications from the respective utility.

Utility Relocation Plans

In the event of a utility conflict other than water and sewer, the Design-Build Team shall submit Highway Construction Plans to the utility company and request that the utility company submit Utility Relocation Plans that show existing utilities and proposed utility relocations for approval by the NCDOT. If Permanent Utility Easement (PUE) is required to relocate a utility, the PUE acquired will be the minimum area necessary to safely relocate the utility. Wetlands, Historical Areas and areas that can be shared with a Drainage/Utility Easement (DUE) or Aerial Utility Easement (AUE) shall be taken into account. If during the Departments review, the PUE is determined to be excessive the Department will request the PUE be reduced as necessary.

The Design-Build Team shall electronically submit a set (half size and full size plans in pdf format) of the Utility Relocation Plans to the State Utilities Manager, via the Design-Build Unit, for review and approval prior to relocation work beginning. The Design-Build Team shall also be responsible for submitting the appropriate agreements to be used with the Utility Relocation Plans (See Agreements found elsewhere in this scope of work). After the review process is complete, the NCDOT Utility Coordination Unit will submit one (1) copy of the Utility Relocation Plans, executed agreements and any necessary comments back to the Design-Build Team. The NCDOT Utility Coordination Unit will also submit an electronic copy of the approved Utility Relocation Plans to the Department's Resident Engineer. If the Utility Relocation Plans are approved subject to changes, it shall be the Design-Build Team's responsibility to coordinate these changes with the appropriate utility company.

Compensable Interest

Typically, affidavits, recorded easements or NCDOT agreements can serve as evidence of prior rights. A compensable interest is identified as follows:

(A) Existing or prior easement rights within the limits of the project, either by recorded right of way or adverse possession (Utility occupying the same location for twenty (20) plus years outside the existing highway rights of way).

(B) Entities covered under *General Statute 136-27.1* and *136-27.2*. Statute requires the NCDOT to pay the non-betterment cost for certain water, sewer and gas relocations.

(C) Utilities that have a joint-use agreement that constitutes a compensable interest with entities that have existing or prior easements rights within the project limits.

Work Performed by Design-Build Team for Utility Owners

If the Design-Build Team elects to make arrangements with a utility owner for proposed utility construction, in which the Utility Owner shall be responsible for the costs of work to be performed by the Design-Build Team, the Design-Build Team shall be responsible for negotiating all costs associated with the proposed construction. Once the Design-Build Team and the Utility Owner agree on a plan and a lump sum estimated cost for the utility construction, the Design-Build Team shall be responsible for submitting electronically a set (half size and full size plans in pdf format) of utility construction drawings to the State Utilities Manager, via the Design-Build Unit, for further handling. Each set shall include a title sheet, plan sheets, profiles and special provisions if required. Also, a letter from the Utility Owner agreeing to the plans and lump sum cost must accompany this package. The NCDOT will reimburse the Design-Build Team the estimated lump sum cost under a Supplemental Agreement. The necessary Utility Agreement to the Utility Owner for reimbursement shall be a two party agreement between the NCDOT and the Utility Owner; and will be developed and executed by the Department.

If the Design-Build Team is requested, in writing, by a utility owner to relocate facilities not impacted by the project's construction, and / or upgrade or incorporate new facilities as part of the highway construction, designs shall be coordinated with the Utility Owner and NCDOT Utilities Unit. The associated design and construction costs shall be negotiated and agreed upon between the Design-Build Team and the utility company. The Design-Build Team shall develop designs; prepare all plans for needed agreements and permits; submit permits directly to the agencies and obtain approval from the agencies. The Design-Build Team shall be responsible for all permit fees.

Cable TV (CATV)

The cost in relocating CATV due to the highway construction shall be the responsibility of the CATV Company; however, 1) if the CATV Company can validate a recorded easement for facilities outside the maintained NCDOT right of way, the Department will bear the relocation expense; and 2) if the adjustment is needed on existing utility poles to accommodate a proposed NCDOT Traffic Management System Fiber Optic Communication Cable Project, the Design-Build Team shall be responsible for the relocation costs.

The NCDOT will not permit CATV to place poles within the highway rights of way but will allow down guys for their facilities within the highway rights of way. Under most circumstances, the CATV Company will continue a joint-use attachment with the local Power and Telephone Company. If the CATV proposed relocation places buried facilities within the highway rights of way then plans and encroachment agreements shall be required by the NCDOT.

Bridge Attachments

No attachment of utilities to bridges will be allowed.

General

The Design-Build Team shall not commence work at points where the highway construction operations are adjacent to utility facilities, until making arrangements with the utility company to protect against damage that might result in expense, loss, disruption of service or other undue inconvenience to the public or utility owner. The Design-Build Team shall be responsible for damage to the existing or relocated utilities resulting from the Team's operations. In the event of interruption of any utilities by the project construction, the Design-Build Team shall promptly notify the proper authority (Utility Owner) and cooperate with the owner in the prompt restoration of service.

If total property acquisition is unavoidable due to encroachment into wells and / or septic systems, then the Design-Build Team shall investigate and determine if extending water and / or sewer lines to the affected property is cost effective. If the Department concurs with the determination that a utility extension is cost effective, the costs associated with the utility construction shall be addressed in accordance with Article 104-7 of the Standard Specifications.

The Design-Build Team shall accommodate utility adjustments, reconstruction, new installation and routine maintenance work that may be underway or take place during the progress of the contract.

The Design-Build Team shall make arrangements to relocate water, sewer or gas facilities in which the entities are covered under General Statute 136-27.1 or 136-27.2 and/or occupy a compensable interest. If relocation of these facilities is required, a Use and Occupancy Agreement shall be executed through the Utilities Coordination Agent.

The Design-Build Team shall be required to use the guidelines as set forth in the following:

(A) *NCDOT Utility Manual - Policies & Procedures for Accommodating Utilities on Highway Rights of Way*

(B) *Federal Aid Policy Guide* - Subchapter G, Part 645, Subparts A & B

(C) *Federal Highway Administration's Program Guide, Utility Adjustments & Accommodations on Federal Aid Highway Projects*

(D) *NCDOT Construction Manual* Section 105-8

(E) *NCDOT Right of Way Manual* - Chapter 16 Utility Relocations

(F) *NCDEQ Public Water Supply* - Rules governing public water supply

(G) *NCDEQ Division of Water Resources* - Title 15A - Environment and Natural Resources

Agreements

If a utility company can provide evidence of prior rights of way or a compensable interest in their facilities, the Design-Build Team shall coordinate the non-betterment utility relocation cost with the utility company and develop the Utility Agreement.

The State Utilities Manager must execute approved agreements on Design-Build highway projects. The Utility Relocation Agreements (Cost Agreement) and encroachment agreements are available from the NCDOT Utility Coordination Unit. Reference Pages 59 and 60 of the *NCDOT Utility Manual on Policies & Procedures for Accommodating Utilities on Highway Rights of Way* for the different types of encroachment agreements available for use.

The Design-Build Team shall be required to utilize the NCDOT Standard Utility Encroachment Agreements as necessary in relocating utilities. The Encroachment Agreements shall be used under the following conditions:

(A) If a utility company is not occupying a valid right of way / compensable interest and the proposed relocation will place the relocated utilities within the existing or proposed highway rights of way.

(B) For **all** new utility installations not covered under a Utility Agreement and within the existing or proposed highway rights of way. This includes all water, sewer and gas lines owned by entities covered under *General Statute 136-27.1* and *136-27.2*.

(C) In either case above, the Design-Build Team shall submit 5 copies of the encroachment plans plus 2 originals and 3 copies of the encroachment agreement to the State Utilities Manager, via the Design-Build Unit, for approval.

RIGHT OF WAY SCOPE OF WORK (3-14-16 EDB)

**** NOTE ** Prior to beginning the right of way acquisition process, the Design-Build Team shall meet with the appropriate NCDOT Location and Surveys, Right of Way and Design-Build Unit personnel.**

It is expected that the Design-Build Team, to the greatest extent practicable, perform construction activities within existing DOT right of way or maintenance limits as applicable. If additional right of way or easements are required, the Design-Build Team shall follow the procedures contained in this scope of work. The Design-Build Team shall be responsible for all right of way staking.

No additional contract time will be allowed for project designs that require the acquisition of additional ROW or easements.

Excluding acquisition services required outside of the project construction limits due solely to a rise in the floodplain water elevation on insurable structures, the Design-Build Team shall employ qualified, competent personnel who are currently **approved by the NCDOT Right of Way Branch,** herein after referred to as the Department, to provide all services necessary to perform all appraisal (except appraisal review and updated appraisals required soley for condemned parcels), negotiation and relocation services required for all right of way and easements, including but not limited to permanent utility easements, necessary for completion of the project in accordance with G.S. 136-28.1 of the General Statutes of North Carolina, as amended, and in accordance with the requirements set forth in the *Uniform Appraisal Standards and General Legal Principles for Highway Right of Way*, the *North Carolina Department of Transportation's Right of Way Manual*, the *North Carolina Department of Transportation's Rules and Regulations for the Use of Right of Way Consultants*, the *Code of Federal Regulations*, and *Chapter 133 of the General Statutes of North Carolina from Section 133-5 through 133-18*, hereby incorporated by reference, including the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended. For a list of firms currently approved, the Design-Build Team should contact Mr. Neal Strickland, in the NCDOT Right of Way Branch, at 919-707-4364. The Design-Build Team shall perform the services as set forth herein and furnish and deliver to the Department reports accompanied by all documents necessary for the settlement of claims and the recordation of deeds, or necessary for condemnation proceedings covering said properties. The Design-Build Team, acting as an agent on behalf of the State of North Carolina, shall provide right of way acquisition services for all bridge replacement sites.

Acquisition services required ouside of the project construction limits due solely to a rise in the floodplain water elevation on insurable structures will be considered extra work and paid for in accordance with Article 104-7 of the 2012 *Standard Specifications for Roads and Structures*.

The Design-Build Team shall carry out the responsibilities as follows:

- With respect to the payments, costs and fees associated with the acquisition of right of way in this contract, the Department will be responsible for only direct payments to property owners for negotiated settlements, recording fees, any relocation benefits, and deposits and fees

involved in the filing of condemnation of any claims. The Department will assume responsibility for all costs associated with the litigation of condemned claims, including testimony by the appraiser(s). The Design-Build Team shall be responsible for all other acquisition related payments, costs and fees, including but not limited to attorney fees required for all non-condemnation acquisitions.

- A Department representative will be available to provide technical guidance on right of way acquisition procedures and to make timely decisions on approving relocation benefits and approving administrative adjustment settlements on behalf of the Department over and above the authority granted to the Department Right of Way Consultant Project Managers.

- The Design-Build Team shall submit a right of way project tracking report and right of way quality control plan to the Department. The Department standard forms and documents shall be used to the extent possible.

- The Design-Build Team shall provide a current title certificate for each parcel as of the date of closing or the date of filing of condemnation, unless required otherwise in the April 2015 NCDOT Right of Way Manual.

- The Design-Build Team shall prepare all Final Condemnation Reports. The Department will prepare all Condemnation Maps. For all plan revisions on condemned parcels that modify the area acquired, modify the Control of Access and / or impact the appraised value, the Design-Build Team shall be responsible for the following:

  - The Design-Build Team shall notify the Division Right of Way Agent, the Area Negotiator, Area Appraiser and the Attorney General, in writing, that revisions have been made that impact a condemned parcel, and provide updated plan sheets and revised area takes.
  - The Design-Build Team shall consult with the Attorney General and the Area Appraiser to determine the status of the negotiations and appraisal(s).
  - If the Attorney General and/or Area Appraiser recommend an updated appraisal, the Design-Build Team shall provide an updated Summary Sheet to the Area Appraiser for the Department's use in obtaining an updated appraisal(s).
  - Upon receipt of the approved updated appraisal(s), the Design-Build Team shall develop a revised written offer. If settlement is not reached, the Design-Build Team shall submit an updated Final Condemnation Report. If settlement is reached, the Design-Build Team shall notify the Attorney General and Area Appraiser in writing and submit an updated Final Condemnation Report with all necessary documentation.
  - The Department will be responsible for payment for the additional deposit to the Attorney General's Office and the Attorney General will prepare and file an Amendment to the Declaration of Taking.

- The following shall be required:

  - Unless otherwise approved by the NCDOT Assistant State Negotiator, in writing, the Design-Build Team shall provide right of way and easement descriptions in metes and bounds format (bearings and distances). The Design-Build Team shall provide exhibits, diagrams and / or other information required to verify the aforementioned descriptions.

- In accordance with the NCDOT April 2015 Right of Way Manual, the Design-Build Team may prepare red-line adjustments for parcels that are not condemned. The Department must approve a red-line adjustment in writing prior to the Design-Build Team making an offer based on the red-line adjustment.

- The Design-Build Team shall prepare, execute and record documents conveying title to acquired properties to the Department with the Register of Deeds.

- The Design-Build Team shall deliver all executed and recorded deeds and easements to the Department.

- For all property purchased in conjunction with the project, title shall be acquired in fee simple or easement and shall be conveyed to "The North Carolina Department of Transportation", free and clear of all liens and encumbrances except permitted encumbrances as determined by the Department.

- It is understood and agreed by and between the parties hereto that all reports, surveys, studies, specifications, memoranda, estimates, etc., secured by and for the Design-Build Team shall become and remain the sole property of the Department upon termination or completion of the work, and the Department shall have the right to use same for any public purpose without compensation to the Design-Build Team.

- The Design-Build Team shall prepare appraisals in accordance with the Department's *Uniform Appraisal Standards and General Legal Principles for Highway Right of Way Acquisitions*. The Design-Build Team's appraiser shall be on the Department's approved state certified appraiser list. The Design-Build Team may request its state certified appraiser be added to the approved state certified appraiser list, subject to approval by the Department's State Appraiser.

- The Design-Build Team shall provide two apprisals for all appraisals over $1,000,000.00.

- The NCDOT, or its agent, will provide appraisal reviews complying with The Department's *Uniform Appraisal Standards and General Legal Principles for Highway Right of Way Acquisitions*. The reviewer will ensure that the appraisal meets the Department's guidelines and requirements, conforms to acceptable appraisal standards and techniques, does not include any non-compensible items or exclude any compensible items and that the value conclusions are reasonable and based on facts presented in the appraisal. The reviewer has the authority to approve, adjust, request additional data or corrections, or not to recommend and request another appraisal. Within 10 business days from the date of receipt, all appraisals will be reviewed by NCDOT Review Appraisers or Review Appraisers under contract to the corresponding NCDOT Area Appraisal Office. The NCDOT will sign as approving any and all appraisals to be used in acquisition.

- The NCDOT will provide relocation reviews and approvals for ALL Replacement Housing Payment calculations and ALL Rent Supplement Payment calculations PRIOR TO these offers being made to the displacees. Within five (5) business days of the receipt of the Replacement Housing Payment or Rent Supplement payment calculation documentation,

which shall include all documentation required for an Evaluation package, the Department will approve the calculation, and the signed Frm15-D will be returned to the Design-Build Team, or a request for an updated calculation or documentation will be presented to the Design-Build Team for further handling. At this time, the Relocation Coordinator in the NCDOT Right of Way Unit is the approving authority for the aforementioned calculations.

- ALL Claims for Payment involving relocation benefits must be submitted to the NCDOT Relocation Coordinator in the Right of Way Unit for approval and processing.

- The Design-Build Team shall provide a right of way certification prior to entering the property.

- The Design-Build Team shall prepare Right of Way Transmittal Summary and/or Narrative Appraisals for all right of way and easement acquistitions.

- In accordance with Chapter 133 of the *General Statutes of North Carolina*, Section 133-40, the Council of State must approve acquisition of property with contaminated soil. Thus, prior to acquiring right of way, control of access and / or easement from any parcel with contaminated soil, the Design-Build Team shall provide a written priority list of all properties with contaminated soil that require right of way, control of access and / or easement acquisition to the Division Right of Way Agent, the Area Negotiator, the Area Appraiser, and the State Property Agent. At a minimum the aforementioned priority list shall contain the following information:

    - Project Contract Number, description and county
    - Parcel number(s) requiring acquisition of contaminated soil
    - Acquisition Appraisal(s)
    - GeoEnvironemtal Impact Evaluation and Hazardous Materials Report provided by the Department
    - Description, with metes and bounds, of the area(s) to be acquired

  The Department will require 90 days from receipt of the information noted above to coordinate with the Council of State and obtain their approval for the acquisition of contaminated property.

Claims Less Than $25,000

For claims with compensation estimated to be less than $25,000 with no damages, the Design-Build Negotiating Team's Project Manager may prepare Right of Way Claim Reports. The reports must be approved by the Division Right of Way Agent prior to any offer (written or oral) and must be accompanied by documentation showing the source of the estimates.

***** STANDARD SPECIAL PROVISIONS *****

VALUE ENGINEERING PROPOSALS

(4-6-15) 104 DB01 G116

Value Engineering Proposals (VEP), as specified in Article 104-12 of the 2012 *Standard Specifications for Roads and Structures* will be accepted. Only proposals, which alter the Technical Proposal submitted by the Design-Build Team and / or the requirements of the RFP issued by the Department, will be considered as Value Engineering Proposals.

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Page 1-36, Subarticle 104-12(B), Evaluation of Proposals, lines 42-44, replace the fourth sentence of the second paragraph with the following:

Pending execution of a formal supplemental agreement implementing an approved VEP and transferal of final plans (hard copy and electronic), sealed by an engineer licensed in the State of North Carolina, incorporating an approved VEP to the State Value Management Engineer, the Resident Engineer and the Design-Build Unit, the Design-Build Team shall remain obligated to perform the work in accordance with the terms of the existing contract with no additional contract time or compensation.

Page 1-37, Subarticle 104-12(D), Preliminary Review, lines 9-12, replace the first sentence of the first paragraph with the following:

Should the Design-Build Team desire a preliminary review of a possible VEP, prior to expending considerable time and expense in full development, a copy of the Preliminary VEP shall be concurrently submitted to the State Value Management Engineer at **ValueManagementUnit@ncdot.gov**, the Resident Engineer and the Design-Build Unit.

Page 1-37, Subarticle 104-12(E), Final Proposal, lines 22-23, replace the first sentence of the first paragraph with the following:

The Design-Build Team shall concurrently submit a copy of the Final VEP to the State Value Management Engineer at **ValueManagementUnit@ncdot.gov,** the Resident Engineer and the Design-Build Unit.

Page 1-38, Subarticle 104-12(F), Modifications, lines 2-8, replace the first paragraph with the following:

The preparation of new design drawings by the Design-Build Team shall be coordinated with the appropriate Department personnel through the State Value Management Engineer. The Design-Build Team shall provide, at no charge to the Department, one set of reproducible drawings of the approved design needed to implement the VEP. Drawings (hard copy and electronic) which are sealed by an engineer licensed in the State of North Carolina shall be concurrently submitted to the State Value Management Engineer, the Resident Engineer and the Design-Build Unit no

later than ten (10) business days after acceptance of a VEP, unless otherwise permitted in writing.

Page 1-38, Subarticle 104-12(F), Modifications, line 17, add the following at the end of the third paragraph:

Supplemental agreements shall add one line item deducting the full savings from the lump sum price bid for the entire project and one line item crediting the Design-Build Team with 50.0% of the total VEP savings.

Page 1-38, Subarticle 104-12(F), Modifications, lines 45-47, replace the eighth paragraph with the following:

Unless and until a supplemental agreement is executed and issued by the Department; and final plans (hard copy and electronic) sealed by an engineer licensed in the State of North Carolina incorporating an approved VEP have been concurrently provided to the State Value Management Engineer, the Resident Engineer and the Design-Build Unit, the Design-Build Team shall remain obligated to perform the work in accordance with the terms of the existing contract with no additional contract time or compensation.

PLANT AND PEST QUARANTINES
(Imported Fire Ant, Gypsy Moth, Witchweed, And Other Noxious Weeds)
08/31/2013 DB1 G130

Within Quarantined Area

This project may be within a county regulated for plant and/or pests. If the project or any part of the Design-Build Team's operations is located within a quarantined area, thoroughly clean all equipment prior to moving out of the quarantined area. Comply with federal/state regulations by obtaining a certificate or limited permit for any regulated article moving from the quarantined area.

Originating in a Quarantined County

Obtain a certificate or limited permit issued by the N.C. Department of Agriculture/United States Department of Agriculture. Have the certificate or limited permit accompany the article when it arrives at the project site.

Contact

Contact the N.C. Department of Agriculture/United States Department of Agriculture at 1-800-206-9333, 919-707-3730, or **http://www.ncagr.gov/plantindustry/** to determine those specific project sites located in the quarantined area or for any regulated article used on this project originating in a quarantined county.

Regulated Articles Include

1. Soil, sand, gravel, compost, peat, humus, muck, and decomposed manure, separately or with other articles. This includes movement of articles listed above that may be associated with cut/waste, ditch pulling, and shoulder cutting.
2. Plants with roots including grass sod.
3. Plant crowns and roots.
4. Bulbs, corms, rhizomes, and tubers of ornamental plants.
5. Hay, straw, fodder, and plant litter of any kind.
6. Clearing and grubbing debris.
7. Used agricultural cultivating and harvesting equipment.
8. Used earth-moving equipment.
9. Any other products, articles, or means of conveyance, of any character, if determined by an inspector to present a hazard of spreading imported fire ant, gypsy moth, witchweed or other noxious weeds.

GIFTS FROM VENDORS AND CONTRACTORS

(12-15-09) DB1 G152

By Executive Order 24, issued by Governor Perdue, and *N.C. G.S.§ 133-32*, it is unlawful for any vendor or contractor (i.e. architect, bidder, contractor, construction manager, design professional, engineer, landlord, offeror, seller, subcontractor, supplier, or vendor), to make gifts or to give favors to any State employee of the Governor's Cabinet Agencies (i.e. Administration, Commerce, Correction, Crime Control and Public Safety, Cultural Resources, Environment and Natural Resources, Health and Human Services, Juvenile Justice and Delinquency Prevention, Revenue, Transportation, and the Office of the Governor). This prohibition covers those vendors and contractors who:

(1) have a contract with a governmental agency; or
(2) have performed under such a contract within the past year; or
(3) anticipate bidding on such a contract in the future.

For additional information regarding the specific requirements and exemptions, vendors and contractors are encouraged to review Executive Order 24 and *G.S. § 133-32*.

Executive Order 24 also encouraged and invited other State Agencies to implement the requirements and prohibitions of the Executive Order to their agencies. Vendors and contractors should contact other State Agencies to determine if those agencies have adopted Executive Order 24.

LIABILITY INSURANCE

(3-19-14) DB1 G160

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Page 1-60, Article 107-15 LIABILITY INSURANCE, line 16, add the following as the second sentence of the third paragraph:

Prior to beginning services, all contractors shall provide proof of coverage issued by a workers' compensation insurance carrier, or a certificate of compliance issued by the Department of Insurance for self-insured subcontractors, irrespective of whether having regularly in service fewer than three employees.

STATE HIGHWAY ADMINISTRATOR TITLE CHANGE:

07-31-12) DB1 G185

Revise the *2012 Standard Specifications* as follows:

Replace all references to "State Highway Administrator" with "Chief Engineer".

SUBLETTING OF CONTRACT:

(12-19-2014) 108-6 DB1 G186

Revise the *2012 Standard Specifications* as follows:

Page 1-67, Article 108-6 Subletting of Contract, line 7, add the following as the second sentence of the fourth paragraph:

Purchasing materials for subcontractors is not included in the percentage of work required to be performed by the Design Build Team. If the Design Build Team sublets items of work but elects to purchase material for the subcontractor, the value of the material purchased will be included in the total dollar amount considered to have been sublet.

NAME CHANGE FOR NCDENR

(1-12-16) DB Z11

Wherever in the 2012 *Standard Specifications for Roads and Structures*, elsewhere in this RFP, or material / information provided by the Department that reference is made to "NCDENR" or "North Carolina Department of Environment and Natural Resources", replace with "NCDEQ" or "North Carolina Department of Environmental Quality", respectively, as the case may be.

SELECT GRANULAR MATERIAL

(9-1-11) DB2 R80

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Page 2-28, Article 265-2 MATERIALS, add the following:

Use only Class III select material for select granular material.

BRIDGE APPROACH FILLS

(9-1-11) DB4 R01

Description

Bridge approach fills include bridge approach fills for sub regional tier bridges and reinforced bridge approach fills. Construct bridge approach fills in accordance with the contract and Roadway Standard Drawing Nos. 422.10 or 422.11. Define "geosynthetics" as geotextiles or geomembranes.

Materials

Refer to Division 10 of the 2012 *Standard Specifications for Roads and Structures*.

Item	Section
Anchor Pins	1056-2
Geotextiles	1056
Portland Cement Concrete	1000
Select Material	1016
Subsurface Drainage Materials	1044
Wire Staples	1060-8(D)

For bridge approach fills for sub regional tier bridges, provide Type 1 geotextile for filtration geotextiles. For reinforced bridge approach fills, provide Type 5 geotextile for geotextile reinforcement and Type 1 geotextile and No. 78M stone for drains. Use Class B concrete for concrete pads.

Use Class III or V select material for reinforced bridge approach fills and only Class V select material (standard size No. 78M stone) for bridge approach fills for sub regional tier bridges. Provide PVC pipes, fittings and outlet pipes for subsurface drainage materials. For drains and PVC pipes behind end bents, use pipes with perforations that meet AASHTO M 278.

Use PVC, HDPE or linear low density polyethylene (LLDPE) geomembranes for reinforced bridge approach fills. For PVC geomembranes, provide grade PVC30 geomembranes that meet ASTM D7176. For HDPE and LLDPE geomembranes, use geomembranes with a nominal thickness of at least 30 mils that meet Geosynthetic Research Institute Standard Specifications GM13 or GM17, respectively. Handle and store geomembranes in accordance with Article 1056-2 of the 2012 *Standard Specifications for Roads and Structures*. Provide material certifications for geomembranes in accordance with Article 1056-3 of the 2012 *Standard Specifications for Roads and Structures*.

Construction Methods

Excavate as necessary for bridge approach fills in accordance with the contract. Notify the Engineer when foundation excavation is complete. Do not place geomembranes or filtration geotextiles until excavation dimensions and foundation material are approved. Attach geomembranes and filtration geotextiles to end bent cap back and wing walls with adhesives, tapes or other approved methods. Glue or weld geomembrane seams to prevent leakage.

For reinforced bridge approach fills, place geotextile reinforcement within 3" of locations shown in Roadway Standard Drawing No. 422.10 and in slight tension free of kinks, folds, wrinkles or creases. Install geotextile reinforcement with the orientation, dimensions and number of layers shown in Roadway Standard Drawing No. 422.10. Place first layer of geotextile reinforcement

directly on geomembranes with no void or material in between. Install geotextile reinforcement with the machine direction (MD) parallel to the roadway centerline. The MD is the direction of the length or long dimension of the geotextile roll. Do not splice or overlap geotextile reinforcement in the MD so seams are perpendicular to the roadway centerline. Wrap geotextile reinforcement at end bent cap back and wing walls as shown in Roadway Standard Drawing No. 422.10 and directed by the Engineer. Extend geotextile reinforcement at least four feet back behind end bent cap back and wing walls into select material.

Overlap adjacent geotextiles at least 18" with seams oriented parallel to the roadway centerline. Hold geotextiles in place with wire staples or anchor pins as needed. Contact the Engineer when existing or future obstructions such as foundations, pavements, pipes, inlets or utilities will interfere with geosynthetics.

For reinforced bridge approach fills, construct one foot square drains consisting of 4" diameter continuous perforated PVC pipes surrounded by No. 78M stone wrapped in Type 1 geotextiles. Install drains in accordance with Standard Drawing No. 422.10. For bridge approach fills for sub regional tier bridges, install 4" diameter continuous perforated PVC drain pipes in accordance with Roadway Standard Drawing No. 422.11.

Use solvent cement to connect PVC pipes so joints do not leak. Connect perforated pipes to outlet pipes just behind wing walls. Provide drain pipes and drains with positive drainage towards outlets. Place pipe sleeves in or under wing walls for outlet pipes so positive drainage is maintained. Use sleeves that can withstand wing wall loads.

Place select material in 8" to 10" thick lifts. Use only hand operated compaction equipment to compact select material for bridge approach fills. Compact Class III select material in accordance with Subarticle 235-3(C) of the 2012 *Standard Specifications for Roads and Structures*. Compact No. 78M stone with a vibratory compactor to the satisfaction of the Engineer. Do not displace or damage geosynthetics, drain pipes or drains when placing and compacting select material. End dumping directly on geosynthetics is not permitted. Do not operate heavy equipment on geosynthetics, drain pipes or drains until they are covered with at least 8" of select material. Replace any damaged geosynthetics, drain pipes or drains to the satisfaction of the Engineer.

Cover open ends of outlet pipes with rodent screens as shown in Roadway Standard Drawing No. 815.03. Connect ends of outlet pipes to concrete pads or existing drainage structures as directed by the Engineer. Construct concrete pads with an Ordinary surface finish that meets Subarticle 825-6(B) of the 2012 *Standard Specifications for Roads and Structures*.

CLASS IV AGGREGATE STABILIZATION

(10-02-14) 510 DB05 R12

Description

As directed by the Engineer, stabilize sandy subgrade material with Class IV aggregate to prevent rutting of the subgrade prior to paving directly on the subgrade. Remove material as needed in cut areas prior to placing the Class IV aggregate.

Materials

Refer to Division 10

Item	Section
Select Material, Class IV	1016

Use Class IV Select Material for Class IV Aggregate Stabilization.

Construction Methods

As directed by the Engineer, place aggregate by end dumping aggregate on approved subgrade soils to provide a working platform and reduce wheel rutting of subgrade material. Place the Class IV aggregate stabilization to a thickness of two to three inches.

Maintenance

Maintain aggregate stabilization in an acceptable condition and minimize the use of heavy equipment on aggregate in order to avoid damaging the subgrade. Provide and maintain drainage ditches and drains as required to prevent entrapping water in aggregate stabilization.

AGGREGATE BASE COURSE

(10-2-14) 520 DB05 R14

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Page 5-10, Article 520-5, HAULING AND PLACING AGGREGATE BASE MATERIAL, add the following sentence to the end of the first paragraph starting on **line 21**:

In addition, as approved by the Engineer, place by end dumping aggregate on approved sandy subgrade soils to provide a working platform and reduce wheel rutting of the subgrade. When allowed, end dumping will be limited to a uniformly spread thickness of two to three inches prior to placing the remaining aggregate thickness with a mechanical spreader.

ASPHALT PAVEMENTS - SUPERPAVE

(6-19-12) (Rev. 11-20-15) 605, 609, 610, 650 DB 6 R01

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Page 6-3, Article 605-7, APPLICATION RATES AND TEMPERATURES, replace this article, including Table 605-1, with the following:

Apply tack coat uniformly across the existing surface at target application rates shown in Table 605-1.

TABLE 605-1 APPLICATION RATES FOR TACK COAT	
Existing Surface	**Target Rate (gal/sy)**
	Emulsified Asphalt
New Asphalt	0.04 ± 0.01
Oxidized or Milled Asphalt	0.06 ± 0.01
Concrete	0.08 ± 0.01

Apply tack coat at a temperature within the ranges shown in Table 605-2. Tack coat shall not be overheated during storage, transport or at application.

TABLE 605-2 APPLICATION TEMPERATURE FOR TACK COAT	
Asphalt Material	**Temperature Range**
Asphalt Binder, Grade PG 64-22	350 - 400° F
Emulsified Asphalt, Grade RS-1H	130 - 160° F
Emulsified Asphalt, Grade CRS-1	130 - 160° F
Emulsified Asphalt, Grade CRS-1H	130 - 160° F
Emulsified Asphalt, Grade HFMS-1	130 - 160° F
Emulsified Asphalt, Grade CRS-2	130 - 160° F

Page 6-7, Article 609-3, FIELD VERIFICATION OF MIXTURE AND JOB MIX FORMULA ADJUSTMENTS, **lines 35-37**, delete the second sentence of the second paragraph.

Page 6-18, Article 610-1, DESCRIPTION, **lines 40-41**, delete the last sentence of the last paragraph.

Page 6-19, Subarticle 610-3(A), Mix Design-General, **line 5**, add the following as the first paragraph:

Warm mix asphalt (WMA) is allowed for use at the Design-Build Team's option in accordance with the NCDOT Approved Products List for WMA Technologies available at:

https://connect.ncdot.gov/resources/Materials/MaterialsResources/Warm%20Mix%20Asphalt%20Approved%20List.pdf

Page 6-20, Subarticle 610-3(C), Job Mix Formula (JMF), lines 47-48, replace the last sentence of the third paragraph with the following:

The JMF mix temperature shall be within the ranges shown in Table 610-1 unless otherwise approved.

Page 6-21, Subarticle 610-3(C), Job Mix Formula (JMF), replace Table 610-1 with the following:

TABLE 610-1 MIXING TEMPERATURE AT THE ASPHALT PLANT	
Binder Grade	**JMF Mix Temperature**
PG 58-28; PG 64-22	250 – 290º F
PG 70-22	275- 305º F
PG 76-22	300- 325º F

Page 6-21, Subarticle 610-3(C), Job Mix Formula (JMF), **lines 1-2**, in the first sentence of the first paragraph, delete "and compaction". Lines 4-7, delete the second paragraph and replace with the following:

When RAS is used, the JMF mix temperature shall be established at 275º F or higher.

Page 6-22, Article 610-4, WEATHER, TEMPERATURE AND SEASONAL LIMITATIONS FOR PRODUCING AND PLACING ASPHALT MIXTURES, **lines 15-17**, replace the second sentence of the first paragraph with the following:

Do not place asphalt material when the air or surface temperatures, measured at the location of the paving operation away from artificial heat, do not meet Table 610-5.

Page 6-23, Article 610-4, WEATHER, TEMPERATURE AND SEASONAL LIMITATIONS FOR PRODUCING AND PLACING ASPHALT MIXTURES, replace Table 610-5 with the following:

TABLE 610-5 *PLACEMENT TEMPERATURES FOR ASPHALT*	
Asphalt Concrete Mix Type	***Minimum Surface and Air Temperature***
B25.0B, C	*35 °F*
I19.0B, C, D	*35 °F*
SF9.5A, S9.5B	*40 °F*[A]
S9.5C, S12.5C	*45 °F*[A]
S9.5D, S12.5D	*50 °F*

A. For the final layer of surface mixes containing recycled asphalt shingles (RAS), the minimum surface and air temperature shall be 50º F.

Page 6-23, Subarticle 610-5(A), General, lines 33-34, replace the last sentence of the third paragraph with the following:

Produce the mixture at the asphalt plant within ±25º F of the JMF mix temperature. The temperature of the mixture, when discharged from the mixer, shall not exceed 350º F.

Page 6-26, Article 610-7, HAULING OF ASPHALT MIXTURE, **lines 22-23**, in the fourth sentence of the first paragraph replace "so as to overlap the top of the truck bed and" with "to". **Line 28**, in the last paragraph, replace "+15º F to -25º F of the specified JMF temperature." with "±25º F of the specified JMF mix temperature."

Page 6-26, Article 610-8, SPREADING AND FINISHING, **line 34**, add the following new paragraph:

As referenced in Section 9.6.3 of the *HMA / QMS Manual*, use the automatic screed controls on the paver to control the longitudinal profile. Where approved by the Engineer, the Design-Build Team has the option to use either a fixed or mobile string line.

Page 6-29, Article 610-13, FINAL SURFACE TESTING AND ACCEPTANCE, line 39, add the following after the first sentence in the first paragraph:

Smoothness acceptance testing using the inertial profiler is not required on ramps and turn lanes that are less than 1000 feet and all loops.

Page 6-30, Subarticle 610-13(A), Option 1 – Inertial Profiler, lines 15-16, replace the fourth sentence of the fourth paragraph with the following:

The interval at which relative profile elevations are reported shall be 2".

Page 6-30, Subarticle 610-13(A), Option 1 – Inertial Profiler, lines 25-28, replace the ninth paragraph with the following:

Operate the profiler at any speed, as per the manufacturer's recommendations, to collect valid data.

Page 6-30, Subarticle 610-13(A), Option 1 – Inertial Profiler, lines 30-31, delete the third sentence of the tenth paragraph.

Page 6-31, Subarticle 610-13(A), Option 1 – Inertial Profiler, lines 11-13, replace the first sentence of the third paragraph with the following:

After testing, transfer the profile data from the profiler portable computer's hard drive to a write once storage media (Flash drive, USB, DVD-R or CD-R) or electronic media approved by the Engineer.

Page 6-31, Subarticle 610-13(A), Option 1 – Inertial Profiler, lines 17-18, replace the first sentence of the fourth paragraph with the following:

Submit a report with the documentation and electronic data of the evaluation for each section to the Engineer within ten days after completion of the smoothness testing. The report shall be in the tabular format for each 0.10 segment, or a portion thereof, with a summary of the MRI values and the localized roughness areas including corresponding project station numbers or acceptable reference points. Calculate the pay adjustments for all segments in accordance with the formulas in Sections (1) and (2) shown below. The Engineer shall review and approve all pay adjustments unless corrective action is required.

Page 6-31, Subarticle 610-13(A)(1), Acceptance for New Construction, lines 36-37, replace the third paragraph with the following:

The price adjustment will apply to each 0.10-mile section, or prorated for a portion thereof, based on the Mean Roughness Index (MRI), the average IRI values from both wheel paths.

Page 6-32, Subarticle 610-13(A)(2), Localized Roughness, lines 12-16, replace the first paragraph with the following:

Areas of localized roughness shall be identified through the "Smoothness Assurance Module (SAM)" provided in the ProVAL software. Use the SAM report to optimize repair strategies by analyzing the measurements from profiles collected using inertial profilers. The ride quality threshold for localized roughness shall be 165 in/mile for any sections that are 15 feet to 100 feet in length at the continuous short interval of 25 feet. Submit a continuous roughness report to identify each section with project station numbers or reference points outside the threshold and identify all localized roughness, with the signature of the Operator included with the submitted IRI trace and electronic files.

Page 6-32, Subarticle 610-13(A)(2), Localized Roughness, line 21, add the following new paragraph:

If the Engineer does not require corrective action, the pay adjustment for each area of localized roughness shall be based on the following formula:

$$PA = (165 - LR\#)\ 5$$

Where:

PA = Pay Adjustment (dollars)
LR# = The Localized Roughness number determined from SAM report for the ride quality threshold

Page 6-41, Subarticle 650-3(B), Mix Design Criteria, replace Table 650-1 with the following:

TABLE 650-1 OGAFC GRADATION CRITERIA			
Grading Requirements	**Total Percent Passing**		
Sieve Size (mm)	***Type FC-1***	***Type FC-1 Modified***	***Type FC-2 Modified***
19.0	-	-	100
12.5	100	100	80 - 100
9.50	75 - 100	75 - 100	55 - 80
4.75	25 - 45	25 - 45	15 - 30
2.36	5 - 15	5 - 15	5 - 15
0.075	1.0 - 3.0	1.0 - 3.0	2.0 - 4.0

ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES

(6-07-12) DB6 R15

The approximate asphalt binder content of the asphalt concrete plant mixtures used on this project will be as follows:

Asphalt Concrete Base Course	Type B 25.0_	4.4%
Asphalt Concrete Intermediate Course	Type I 19.0_	4.8%
Asphalt Concrete Surface Course	Type S 4.75A	6.8%
Asphalt Concrete Surface Course	Type SA-1	6.8%
Asphalt Concrete Surface Course	Type SF 9.5A	6.7%
Asphalt Concrete Surface Course	Type S 9.5_	6.0%
Asphalt Concrete Surface Course	Type S 12.5_	5.6%

The actual asphalt binder content will be established during construction by the Engineer within the limits established in the 2012 *Standard Specifications for Roads and Structures.*

ASPHALT PLANT MIXTURES

(07-01-95) DB6 R20

Place asphalt concrete base course material in trench sections with asphalt pavement spreaders made for the purpose or with other equipment approved by the Engineer.

SUBSURFACE DRAINAGE

(9-1-11) DB8 R05

Revise the *2012 Standard Specifications for Roads and Structures* as follows:

Page 8-11, Article 815-1, Delete the first sentence and replace with the following:

The Design-Build Team shall construct subsurface drains, underdrains, blind drains and other types of drains where groundwater is within 6 feet of subgrade.

GUARDRAIL ANCHOR UNITS, TYPE 350 (TL-2)

(10-21-08) (Rev. 7-21-15) DB8 R064

Description

Furnish and install guardrail anchor units in accordance with the details in the plans developed by the Design-Build Team, the applicable requirements of Section 862 of the 2012 *Standard Specifications for Roads and Structures*, and at locations shown in the plans developed by the Design-Build Team.

Materials

Furnish guardrail anchor units listed on the NCDOT Approved Products List at **https://apps.dot.state.nc.us/vendor/approvedproducts/** or approved equal.

Prior to installation the Design-Build Team shall submit to the Engineer:

1. FHWA acceptance letter for each guardrail anchor unit certifying it meets the requirements of NCHRP Report 350, Test Level 2 in accordance with Article 106-2 of the 2012 *Standard Specifications for Roads and Structures*.

2. Certified working drawings and assembling instructions from the manufacturer for each guardrail anchor unit in accordance with Article 105-2 of the 2012 *Standard Specifications for Roads and Structures*.

No modifications shall be made to the guardrail anchor unit without the express written permission from the manufacturer. Perform installation in accordance with the details in the plans developed by the Design-Build Team, and details and assembling instructions furnished by the manufacturer.

Construction Methods

Guardrail end delineation shall be required on all approach and trailing end sections for both temporary and permanent installations. Guardrail end delineation shall consist of yellow reflective sheeting applied to the entire end section of the guardrail in accordance with Article 1088-3 of the 2012 *Standard Specifications for Roads and Structures*.

GUARDRAIL ANCHOR UNITS, TYPE 350 (TL-3)

(12-19-14) (Rev. 7-21-15) DB8 R65

Description

Furnish and install guardrail anchor units in accordance with the details in the plans developed by the Design-Build Team, the applicable requirements of Section 862 of the 2012 *Standard Specifications for Roads and Structures*, and at locations shown in the plans developed by the Design-Build Team.

Materials

The Design-Build Team shall furnish guardrail anchor units listed on the NCDOT Approved Products List at **https://apps.dot.state.nc.us/vendor/approvedproducts/** or approved equal.

Prior to installation the Design-Build Team shall submit to the Engineer:

1. FHWA acceptance letter for each guardrail anchor unit certifying it meets the requirements of NCHRP Report 350, Test Level 3, in accordance with Article 106-2 of the 2012 *Standard Specifications for Roads and Structures*.

2. Certified working drawings and assembling instructions from the manufacturer for each guardrail anchor unit in accordance with Article 105-2 of the 2012 *Standard Specifications for Roads and Structures*.

No modifications shall be made to the guardrail anchor unit without the express written permission from the manufacturer. Perform installation in accordance with the details in the plans developed by the Design-Build Team, and details and assembling instructions furnished by the manufacturer.

Construction Methods

Guardrail end delineation shall be required on all approach and trailing end sections for both temporary and permanent installations. Guardrail end delineation shall consist of yellow reflective sheeting applied to the entire end section of the guardrail in accordance with Article 1088-3 of the 2012 *Standard Specifications for Roads and Structures*.

PREFORMED SCOUR HOLE WITH LEVEL SPREADER APRON

(08-24-09) DB8 R105

Description

Construct and maintain preformed scour holes with spreader aprons at the locations shown on the plans developed by the Design-Build Team and in accordance with the details in the plans developed by the Design-Build Team. Work includes excavation, shaping and maintaining the hole and apron, furnishing and placing filter fabric, rip rap (class as specified in the plans developed by the Design-Build Team) and permanent soil reinforcement matting.

Materials

Item	Section
Plain rip rap	1042
Filter Fabric	1056

The permanent soil reinforcement matting shall be permanent erosion control reinforcement mat and shall be constructed of synthetic or a combination of coconut and synthetic fibers evenly distributed throughout the mat between a bottom UV stabilized netting and a heavy duty UV stabilized top net. The matting shall be stitched together with UV stabilized polypropylene thread to form a permanent three dimensional structure. The mat shall have the following minimum physical properties:

Property	***Test Method***	***Value Unit***
Light Penetration	ASTM D6567	9 %
Thickness	ASTM D6525	0.40 in
Mass Per Unit Area	ASTM D6566	0.55 lb/sy
Tensile Strength	ASTM D6818	385 lb/ft
Elongation (Maximum)	ASTM D6818	49 %
Resiliency	ASTM D1777	>70 %
UV Stability *	ASTM 4355	≥80 %
Porosity (Permanent Net)	ECTC Guidelines	≥85 %
Maximum Permissible Shear Stress (Vegetated)	Performance Bench Test	≥8.0 lb/ft^2
Maximum Allowable Velocity (Vegetated)	Performance Bench Test	≥16.0 ft/s

*ASTM D1682 Tensile Strength and % strength retention of material after 1000 hours of exposure.

A certification (Type 1, 2, or 3) from the manufacturer showing:

(A) the chemical and physical properties of the mat used, and

(B) conformance of the mat with this specification will be required.

Construction Methods

All areas to be protected with the mat shall be brought to final grade and seeded in accordance with Section 1660 of the 2012 *Standard Specifications for Roads and Structures*. The surface of the soil shall be smooth, firm, stable and free of rocks, clods, roots or other obstructions that would prevent the mat from lying in direct contact with the soil surface. Areas where the mat is to be placed will not need to be mulched.

STREET SIGNS AND MARKERS AND ROUTE MARKERS

(07-01-95) DB9 R01

Move any existing street signs, markers, and route markers out of the construction limits of the project and install the street signs and markers and route markers so that they will be visible to the traveling public if there is sufficient right of way for these signs and markers outside of the construction limits.

Near the completion of the project and when so directed by the Engineer, move the signs and markers and install them in their proper location in regard to the finished pavement of the project.

Stockpile any signs or markers that cannot be relocated due to lack of right of way, or any signs and markers that will no longer be applicable after the construction of the project, at locations directed by the Engineer for removal by others.

The Design-Build Team shall be responsible to the owners for any damage to any street signs and markers or route markers during the above described operations.

MATERIALS

(2-21-12) (Rev. 9-29-16) 1000, 1002, 1005, 1016, 1018, 1024, 1050, 1074, 1078, 1080, 1081, 1084, 1086, 1087, 1092 DB10 R01

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Page 10-1, Article 1000-1, DESCRIPTION, Lines 9 - 10, replace the last sentence of the first paragraph with the following:

Type IL, IP, IS or IT blended cement may be used instead of Portland cement.

Page 10-1, Article 1000-1, DESCRIPTION, Line 14, add the following:

If any change is made to the mix design, submit a new mix design (with the exception of an approved pozzolan source change).

If any major change is made to the mix design, also submit new test results showing the mix design conforms to the criteria. Define a major change to the mix design as:

(1) A source change in coarse aggregate, fine aggregate or cement.

(2) A pozzolan class or type change (e.g. Class F fly ash to Class C fly ash).

(3) A quantitative change in coarse aggregate (applies to an increase or decrease greater than 5%), fine aggregate (applies to an increase or decrease greater than 5%), water (applies to an increase only), cement (applies to a decrease only), or pozzolan (applies to an increase or decrease greater than 5%).

Use materials which do not produce a mottled appearance through rusting or other staining of the finished concrete surface.

Page 10-1, Article 1000-2, MATERIALS, line 16; Page 10-8, Subarticle 1000-7(A), MATERIALS, Line 8; and Page 10-18, Article 1002-2, MATERIALS, Line 9, add the following to the table of item references:

Item	Section
Type IL Blended Cement	1024-1

Page 10-1, Subarticle 1000-3(A), Composition and Design, Lines 25 - 27, replace the second paragraph with the following:

Fly ash may be substituted for cement in the mix design up to 30% at a rate of 1.0 pound of fly ash to each pound of cement replaced.

Page 10-2, Subarticle 1000-3(A), Composition and Design, Lines 12 - 21, delete the third paragraph through the sixth paragraph beginning with "If any change is made to the mix design, submit…" through "…(applies to a decrease only)."

Page 10-5, Table 1000-1, REQUIREMENTS FOR CONCRETE, replace with the following:

TABLE 1000-1
REQUIREMENTS FOR CONCRETE

Class of Concrete	Min. Comp. Strength at 28 days	Maximum Water-Cement Ratio				Consistency Max. Slump		Cement Content			
		Air-Entrained Concrete		Non Air-Entrained Concrete		Vibrated	Non-Vibrated	Vibrated		Non-Vibrated	
		Rounded Aggregate	Angular Aggre-gate	Rounded Aggregate	Angular Aggre-gate			Min.	Max.	Min.	Max.
Units	*psi*					*inch*	*inch*	*lb/cy*	*lb/cy*	*lb/cy*	*lb/cy*
AA	4,500	0.381	0.426	-	-	3.5	-	639	715	-	-
AA Slip Form	4,500	0.381	0.426	-	-	1.5	-	639	715	-	-
Drilled Pier	4,500	-	-	0.450	0.450	-	5-7 dry 7-9 wet	-	-	640	800
A	3,000	0.488	0.532	0.550	0.594	3.5	4	564	-	602	-
B	2,500	0.488	0.567	0.559	0.630	1.5 machine-placed 2.5 hand-placed	4	508	-	545	-
Sand Light-weight	4,500	-	0.420	-	-	4	-	715	-	-	-
Latex Modified	3,000 7 day	0.400	0.400	-	-	6	-	658	-	-	-
Flowable Fill Excavatable	150 max. at 56 days	as needed	as needed	as needed	as needed	-	Flow-able	-	-	40	100
Flowable Fill Non-Excavatable	125	as needed	as needed	as needed	as needed	-	Flow-able	-	-	100	as needed
Pavement	4,500 design, field 650 flexural, design only	0.559	0.559	-	-	1.5 slip form 3.0 hand place	-	526	-	-	-
Precast	See Table 1077-1	as needed	as needed	-	-	6	as needed	as needed	as needed	as needed	as needed
Prestress	per contract	See Table 1078-1	See Table 1078-1	-	-	8	-	564	as needed	-	-

Page 10-6, Subarticle 1000-4(I), Use of Fly Ash, Lines 36 - 2, replace the first paragraph with the following:

Fly ash may be substituted for cement in the mix design up to 30% at a rate of 1.0 pound of fly ash to each pound of cement replaced. Use Table 1000-1 to determine the maximum allowable water-cementitious material (cement + fly ash) ratio for the classes of concrete listed.

Page 10-7, Table 1000-3, MAXIMUM WATER CEMENTITIOUS MATERIAL RATIO, delete the table.

Page 10-7, Article 1000-5, HIGH EARLY STRENGTH PORTLAND CEMENT CONCRETE, Lines 30 - 31, delete the second sentence of the third paragraph.

Page 10-19, Article 1002-3, SHOTCRETE FOR TEMPORARY SUPPORT OF EXCAVATIONS, Line 30, add the following at the end of section 1002:

(H) Handling and Storing Test Panels

Notify the Area Materials Engineer when preconstruction or production test panels are made within 24 hours of shooting the panels. Field cure and protect test panels from damage in accordance with ASTM C1140 until the Department transports panels to the Materials and Tests Regional Laboratory for coring.

Page 10-23, Table 1005-1, AGGREGATE GRADATION-COARSE AGGREGATE, replace with the following:

TABLE 1005-1
AGGREGATE GRADATION - COARSE AGGREGATE

Percentage of Total by Weight Passing

Std. Size #	2"	1 -1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#10	#16	#40	#200	Remarks
4	100	90-100	20-55	0-15	-	0-5	-	-	-	-	-	**A**	Asphalt Plant Mix
467M	100	95-100	-	35-70	-	0-30	0-5	-	-	-	-	**A**	Asphalt Plant Mix
5	-	100	90-100	20-55	0-10	0-5	-	-	-	-	-	**A**	AST, Sediment Control Stone
57	-	100	95-100	-	25-60	-	0-10	0-5	-	-	-	**A**	AST, Structural Concrete, Shoulder Drain, Sediment Control Stone
57M	-	100	95-100	-	25-45	-	0-10	0-5	-	-	-	**A**	AST, Concrete Pavement
6M	-	-	100	90-100	20-55	0-20	0-8	-	-	-	-	**A**	AST
67	-	-	100	90-100	-	20-55	0-10	0-5	-	-	-	**A**	Asphalt Plant Mix, AST, Structural Concrete
78M	-	-	-	100	98-100	75-100	20-45	0-15	-	-	-	**A**	Asphalt Plant Mix, AST, Structural Concrete, Weep Hole Drains
14M	-	-	-	-	100	98-100	35-70	5-20	-	0-8	-	**A**	Asphalt Plant Mix, AST, Structural Concrete Weep Hole Drains
9M	-	-	-	-	100	98-100	85-100	10-40	-	0-10	-	**A**	AST
ABC	-	100	75-97	-	55-80	-	35-55	-	25-45	-	14-30	4-12[B]	Aggregate Base Course, Aggregate Stabilization
ABC (M)	-	100	75- 100	-	45-79	-	20-40	-	0- 25	-	-	0-12[B]	Maintenance Stabilization
Light-weight[C]	-	-	-	-	100	80-100	5- 40	0-20	-	0-10	-	0-2.5	AST

A. See Subarticle 1005-4(A).
B. See Subarticle 1005-4(B).
C. For Lightweight Aggregate used in Structural Concrete, see Subarticle 1014-2(E)(6).

Page 10-39, Article 1016-3, CLASSIFICATIONS , Lines 27 - 32, replace with the following:

Select material is clean, unweathered durable, blasted rock material obtained from an approved source. While no specific gradation is required, the below criteria shall be used to evaluate the materials for visual acceptance by the Engineer:

(A) At least 50% of the rock has a diameter from 1.5-foot to 3-foot,

(B) 30% of the rock ranges in size from 2" to 1.5-foot in diameter, and

(C) Not more than 20% of the rock is less than 2" in diameter. No rippable rock will be permitted.

Page 10-40, Tables 1018-1 and 1018-2, PIEDMONT, WESTERN AND COASTAL AREA CRITERIA FOR ACCEPTANCE OF BORROW MATERIAL, under second column in both tables, replace second row with the following:

Acceptable, but not to be used in the top three feet of embankment or backfill

Page 10-46, Article 1024-1, PORTLAND CEMENT, Line 33, add the following as the ninth paragraph:

Use Type IL blended cement that meets AASHTO M 240, except that the limestone content shall be limited to between 5 and 12% by weight and the constituents shall be interground. Class F fly ash can replace a portion of Type IL blended cement and shall be replaced as outlined in Subarticle 1000-4(I) for Portland cement. For mixes that contain cement with alkali content between 0.6% and 1.0% and for mixes that contain a reactive aggregate documented by the Department, use a pozzolan in the amount shown in Table 1024-1.

Page 10-46, Table 1024-1, POZZOLANS FOR USE IN PORTLAND CEMENT CONCRETE, replace with the following:

TABLE 1024-1 POZZOLANS FOR USE IN PORTLAND CEMENT CONCRETE	
Pozzolan	**Rate**
Class F Fly Ash	20% - 30% by weight of required cement content with 1.0 pound Class F fly ash per pound of cement replaced
Ground Granulated Blast Furnace Slag	35% - 50% by weight of required cement content with 1.0 pound slag per pound of cement replaced
Microsilica	4% - 8% by weight of required cement content with 1.0 pound microsilica per pound of cement replaced

Page 10-47, Subarticle 1024-3(B), Approved Sources, Lines 16 - 18, replace the second sentence of the second paragraph with the following

Tests shall be performed by AASHTO's designated National Transportation Product Evaluation Program (NTPEP) laboratory for concrete admixture testing.

Page 10-65, Article 1050-1, GENERAL, Line 41, replace the first sentence with the following:

All fencing material and accessories shall meet Section 106.

Page 10-115, Subarticle 1074-7(B), Gray Iron Castings, Lines 10 - 11, replace the first two sentences with the following:

Supply gray iron castings meeting all facets of AASHTO M 306 excluding proof load. Proof load testing will only be required for new casting designs during the design process, and conformance to M306 loading (40,000 lbs.) will be required only when noted on the design documents developed by the Design-Build Team.

Page 10-126, Table 1078-1, REQUIREMENTS FOR CONCRETE, replace with the following:

TABLE 1078-1 REQUIREMENTS FOR CONCRETE		
Property	**28 Day Design Compressive Strength 6,000 psi or less**	**28 Day Design Compressive Strength greater than 6,000 psi**
Maximum Water / Cementitious Material Ratio	0.45	0.40
Maximum Slump without HRWR	3.5"	3.5"
Maximum Slump with HRWR	8"	8"
Air Content (upon discharge into forms)	5 + 2%	5 + 2%

Page 10-151, Article 1080-4, INSPECTION AND SAMPLING, Lines 18 - 22, replace (B), (C) and (D) with the following:

(B) At least 3 panels prepared as specified in 5.5.10 of AASHTO M 300, Bullet Hole Immersion Test.

(C) At least 3 panels of 4" x 6" x 1/4" for the Elcometer Adhesion Pull Off Test, ASTM D4541.

(D) A certified test report from an approved independent testing laboratory for the Salt Fog Resistance Test, Cyclic Weathering Resistance Test, and Bullet Hole Immersion Test as specified in AASHTO M 300.

(E) A certified test report from an approved independent testing laboratory that the product has been tested for slip coefficient and meets AASHTO M253, Class B.

Page 10-161, Subarticle 1081-1(A), Classifications, Lines 29 - 33, delete first three sentences of the description for Type 2 and replace with the following:

Type 2 - A low-modulus, general-purpose adhesive used in epoxy mortar repairs. It may be used to patch spalled, cracked or broken concrete where vibration, shock or expansion and contraction are expected.

Page 10-162, Subarticle 1081-1(A), Classifications, Lines 4 - 7, delete the second and third sentences of the description for Type 3A. **Lines 16-22,** delete Types 6A, 6B and 6C.

Page 10-162, Subarticle 1081-1(B), Requirements, Lines 26 - 30, replace the second paragraph with the following:

For epoxy resin systems used for embedding dowel bars, threaded rods, rebar, anchor bolts and other fixtures in hardened concrete, the manufacturer shall submit test results showing that the bonding system will obtain 125% of the specified required yield strength of the fixture. Furnish certification that, for the particular bolt grade, diameter and embedment depth required, the anchor system will not fail by adhesive failure and that there is no movement of the anchor bolt. For certification and anchorage, use 3,000 psi as the minimum Portland cement concrete compressive strength used in this test. Use adhesives that meet Section 1081.

List the properties of the adhesive on the container and include density, minimum and maximum temperature application, setting time, shelf life, pot life, shear strength and compressive strength.

Page 10-163, Table 1081-1, PROPERTIES OF MIXED EPOXY RESIN SYSTEMS, replace with the following:

Table 1081-1
Properties of Mixed Epoxy Resin Systems

Property	Type 1	Type 2	Type 3	Type 3A	Type 4A	Type 4B	Type 5
Viscosity-Poises at 77°F ± 2°F	Gel	10-30	25-75	Gel	40-150	40-150	1-6
Spindle No.	-	3	4	--	4	4	2
Speed (RPM)	-	20	20	--	10	10	50
Pot Life (Minutes)	20-50	30-60	20-50	5-50	40-80	40-80	20-60
Minimum Tensile Strength at 7 days (psi)	1,500	2,000	4,000	4,000	1,500	1,500	4,000
Tensile Elongation at 7 days (%)	30 min.	30 min.	2-5	2-5	5-15	5-15	2-5
Min. Compressive Strength of 2". mortar cubes at 24 hours	3,000 (Neat)	4,000-	6,000-	6,000 (Neat)	3,000	3,000	6,000
Min. Compressive Strength of 2" mortar cubes at 7 days	5,000 (Neat)	-	-	-	-	5,000	-
Maximum Water Absorption (%)	1.5	1.0	1.0	1.5	1.0	1.0	1.0
Min. Bond Strength Slant Shear Test at 14 days (psi)	1,500	1,500	2,000	2,000	1,500	1,500	1,500

Page 10-164, Subarticle 1081-1(E), Prequalification, lines 31-33, replace the second sentence of the first paragraph with the following:

Manufacturers choosing to supply material for Department jobs must submit an application through the Value Management Group with the following information for each type and brand name:

Page 10-164, Subarticle 1081-1(E)(3), Line 37, replace with the following:

(3) Type of the material in accordance with Articles 1081-1 and 1081-4,

Page 10-165, Subarticle 1081-1(E)(6), Line 1, in the first sentence of the first paragraph replace "AASHTO M 237" with "the specifications".

Page 10-165, Subarticle 1081-1(E), Prequalification, Line 9 - 10, delete the second sentence of the last paragraph.

Page 10-165, Subarticle 1081-1(F), Acceptance, Line 14, in the first sentence of the first paragraph replace "Type 1" with "Type 3".

Page 10-169, Subarticle 1081-3(G), Anchor Bolt Adhesives, delete this subarticle.

Page 10-170, Article 1081-3, HOT BITUMEN, Line 9, add the following at the end of Section 1081:

1081-4 EPOXY RESIN ADHESIVE FOR BONDING TRAFFIC MARKINGS

(A) General

This section covers epoxy resin adhesive for bonding traffic markers to pavement surfaces.

(B) Classification

The types of epoxies and their uses are as shown below:

Type I – Rapid Setting, High Viscosity, Epoxy Adhesive. This type of adhesive provides rapid adherence to traffic markers to the surface of pavement.

Type II – Standard Setting, High Viscosity, Epoxy Adhesive. This type of adhesive is recommended for adherence of traffic markers to pavement surfaces when rapid set is not required.

Type III – Rapid Setting, Low Viscosity, Water Resistant, Epoxy Adhesive. This type of rapid setting adhesive, due to its low viscosity, is appropriate only for use with embedded traffic markers.

Type IV – Standard Set Epoxy for Blade Deflecting-Type Plowable Markers.

(C) Requirements

Epoxies shall conform to the requirements set forth in AASHTO M 237.

(D) Prequalification

Refer to Subarticle 1081-1(E).

(E) Acceptance

Refer to Subarticle 1081-1(F).

Page 10-173, Article 1084-2, STEEL SHEET PILES, Lines 37 - 38, replace first paragraph with the following:

Steel sheet piles detailed for permanent applications shall be hot rolled and meet ASTM A572 or ASTM A690 unless otherwise required by the plans developed by the Design-Build Team. Steel sheet piles shall be coated as required by the plans developed by the Design-Build Team. Galvanized sheet piles shall be coated in accordance with Section 1076. Metallized sheet piles shall be metallized in accordance to the Project Special Provision "Thermal Sprayed Coatings (Metallization)" with an 8 mil, 99.9% aluminum alloy coating and a 0.5 mil seal coating. Any portion of the metallized sheet piling encased in concrete shall receive a barrier coat. The barrier coat shall be an approved waterborne coating with a low-viscosity which readily absorbs into the pores of the aluminum thermal sprayed coating. The waterborne coating shall be applied at a spreading rate that results in a theoretical 1.5 mil dry film thickness. The manufacturer shall issue a letter of certification that the resin chemistry of the waterborne coating is compatible with the 99.9% aluminum thermal sprayed alloy and suitable for tidal water applications.

Page 10-174, Subarticle 1086-1(B)(1), Epoxy, Lines 18 - 24, replace with the following:

The epoxy shall meet Article 1081-4.

The two types of epoxy adhesives which may be used are Type I, Rapid Setting, and Type II, Standard Setting. Use Type II when the pavement temperature is above 60° F or per the manufacturer's recommendations, whichever is more stringent. Use Type I when the pavement temperature is between 50° F and 60° F or per the manufacturer's recommendations, whichever is more stringent. Epoxy adhesive Type I, Cold Set, may be used to attach temporary pavement markers to the pavement surface when the pavement temperature is between 32° F and 50° F or per the manufacturer's recommendations, whichever is more stringent.

Page 10-175, Subarticle 1086-2(E), Epoxy Adhesives, Line 27, replace "Section 1081" with "Article 1081-4".

Page 10-177, Subarticle 1086-3(E), Epoxy Adhesives, Line 22, replace "Section 1081" with "Article 1081-4".

Page 10-179, Subarticle 1087-4(A), Composition, Lines 39 - 41, replace the third paragraph with the following:

All intermixed and drop-on glass beads shall not contain more than 75 ppm arsenic or 200 ppm lead.

Page 10-180, Subarticle 1087-4(B), Physical Characteristics, Line 8, replace the second paragraph with the following:

All intermixed and drop-on glass beads shall comply with NCGS § 136-30.2 and 23 USC § 109(r).

Page 10-181, Subarticle 1087-7(A), Intermixed and Drop-on Glass Beads, Line 24, add the following after the first paragraph:

Use X-ray Fluorescence for the normal sampling procedure for intermixed and drop-on beads, without crushing, to check for any levels of arsenic and lead. If any arsenic or lead is detected, the sample shall be crushed and repeat the test using X-ray Fluorescence. If the X-ray Fluorescence test shows more than a LOD of 5 ppm, test the beads using United States Environmental Protection Agency Method 6010B, 6010C or 3052 for no more than 75 ppm arsenic or 200 ppm lead.

SELECT MATERIAL, CLASS III, TYPE 3

12-02-11 DB10 R005

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Page 10-39, Article 1016-3, CLASS III, add the following after **line 14**:

Type 3 Select Material

Type 3 select material is a natural or manufactured fine aggregate material meeting the following gradation requirements and as described in Sections 1005 and 1006:

Percentage of Total by Weight Passing							
3/8"	#4	#8	#16	#30	#50	#100	#200
100	95-100	65-100	35-95	15-75	5-35	0-25	0-8

Page 10-39, Article 1016-3, CLASS III, line 15, replace “either type” with “Type 1, Type 2 or Type 3”.

Page 10-62, Article 1044-1, line 36, delete the sentence and replace with the following:

Subdrain fine aggregate shall meet Class III select material, Type 1 or Type 3.

Page 10-63, Article 1044-2, line 2, delete the sentence and replace with the following:

Subdrain coarse aggregate shall meet Class V select material.

SHOULDER AND SLOPE BORROW

1/22/13 1019 DB10 R10

Use soil in accordance with Section 1019 of the 2012 *Standard Specifications for Roads and Structures*. Use soil consisting of loose, friable, sandy material with a PI greater than 6 and less than 25 and a pH ranging from 5.5 to 7.0.

Soil with a pH ranging from 4.0 to 5.5 will be accepted without further testing if additional limestone is provided in accordance with the application rates shown in Table 1019-1A. Soil type shall be identified during the soil analysis. Soils with a pH above 7.0 require acidic amendments to be added. Submit proposed acidic amendments to the Engineer for review and approval. Soils with a pH below 4.0 or that do not meet the PI requirements shall not be used.

TABLE 1019-1A
ADDITIONAL LIMESTONE APPLICATION RATE TO RAISE pH

pH TEST RESULT	Sandy Soils Additional Rate (lbs. / Acre)	Silt Loam Soils Additional Rate (lbs. / Acre)	Clay Loam Soils Additional Rate (lbs. / Acre)
4.0 - 4.4	1,000	4,000	6,000
4.5 - 4.9	500	3,000	5,000
5.0 - 5.4	NA	2,000	4,000

Note: Limestone application rates shown in this table are in addition to the standard rate of 4000 lbs. / acre required for seeding and mulching.

No direct payment will be made for providing additional lime or acidic amendments for pH adjustment.

GROUT PRODUCTION AND DELIVERY

(3-17-15) 1003 DB10 R20

Revise the *2012 Standard Specifications for Roads and Structures* as follows:

Replace Section 1003 with the following:

SECTION 1003
GROUT PRODUCTION AND DELIVERY

1003-1 DESCRIPTION

This section addresses cement grout to be used for structures, foundations, retaining walls, concrete barriers, embankments, pavements and other applications in accordance with the contract. Produce non-metallic grout composed of Portland cement and water and at the Design Build Team's option or as required, aggregate and pozzolans. Include chemical admixtures as

required or needed. Provide sand cement or neat cement grout as required. Define "sand cement grout" as grout with only fine aggregate and "neat cement grout" as grout without aggregate.

The types of grout with their typical uses are as shown below:

Type 1 – A cement grout with only a 3-day strength requirement and a fluid consistency that is typically used for filling subsurface voids.

Type 2 – A nonshrink grout with strength, height change and flow conforming to ASTM C1107 that is typically used for foundations, ground anchors and soil nails.

Type 3 – A nonshrink grout with high early strength and freeze-thaw durability requirements that is typically used in pile blockouts, grout pockets, shear keys, dowel holes and recesses for concrete barriers and structures.

Type 4 – A neat cement grout with low strength, a fluid consistency and high fly ash content that is typically used for slab jacking.

Type 5 – A low slump, low mobility sand cement grout with minimal strength that is typically used for compaction grouting.

1003-2 MATERIALS

Refer to Division 10.

Item	**Section**
Chemical Admixtures	1024-3
Fine Aggregate	1014-1
Fly Ash	1024-5
Ground Granulated Blast Furnace Slag	1024-6
Portland Cement	1024-1
Silica Fume	1024-7
Water	1024-4

Do not use grout that contains soluble chlorides or more than 1% soluble sulfate. At the Design Build Team's option, use an approved packaged grout instead of the materials above except for water. Use packaged grouts that are on the NCDOT Approved Products List.

Use admixtures for grout that are on the NCDOT Approved Products List or other admixtures in accordance with Subarticle 1024-3(E) except do not use concrete additives or unclassified or other admixtures in Type 4 or 5 grout. Use Class F fly ash for Type 4 grout and Type II Portland cement for Type 5 grout.

Use well graded rounded aggregate with a gradation, liquid limit (LL) and plasticity index (PI) that meet Table 1003-1 for Type 5 grout. Fly ash may be substituted for a portion of the fines in the aggregate. Do not use any other pozzolans in Type 5 grout.

TABLE 1003-1 AGGREGATE REQUIREMENTS FOR TYPE 5 GROUT			
Gradation		**Maximum Liquid Limit**	**Maximum Plasticity Index**
Sieve Designation per AASHTO M 92	**Percentage Passing (% by weight)**		
3/8"	100	N/A	N/A
No. 4	70 – 95		
No. 8	50 – 90		
No. 16	30 – 80		
No. 30	25 – 70		
No. 50	20 – 50		
No. 100	15 – 40		
No. 200	10 – 30	25	10

1003-3 COMPOSITION AND DESIGN

When using an approved packaged grout, a grout mix design submittal is not required. Otherwise, submit proposed grout mix designs for each grout mix to be used in the work. Mixes for all grout shall be designed by a Certified Concrete Mix Design Technician or an Engineer licensed by the State of North Carolina. Mix proportions shall be determined by a testing laboratory approved by the Department. Base grout mix designs on laboratory trial batches that meet Table 1003-2 and this section. With permission, the Design Build Team may use a quantity of chemical admixture within the range shown on the current list of approved admixtures maintained by the Materials and Tests Unit.

Submit grout mix designs in terms of saturated surface dry weights on Materials and Tests Form 312U at least 35 days before proposed use. Adjust batch proportions to compensate for surface moisture contained in the aggregates at the time of batching. Changes in the saturated surface dry mix proportions will not be permitted unless revised grout mix designs have been submitted to the Engineer and approved.

Accompany Materials and Tests Form 312U with a listing of laboratory test results of compressive strength, density and flow or slump and if applicable, aggregate gradation, durability and height change. List the compressive strength of at least three 2" cubes at the age of 3 and 28 days.

The Engineer will review the grout mix design for compliance with the contract and notify the Design Build Team as to its acceptability. Do not use a grout mix until written notice has been received. Acceptance of the grout mix design or use of approved packaged grouts does not relieve the Design Build Team of his responsibility to furnish a product that meets the contract. Upon written request from the Design Build Team, a grout mix design accepted and used satisfactorily on any Department project may be accepted for use on other projects.

Perform laboratory tests in accordance with the following test procedures:

Property	Test Method
Aggregate Gradation[A]	AASHTO T 27
Compressive Strength	AASHTO T 106
Density (Unit Weight)	AASHTO T 121, AASHTO T 133[B], ANSI/API RP[C] 13B-1[B] (Section 4, Mud Balance)
Durability	AASHTO T 161[D]
Flow	ASTM C939 (Flow Cone)
Height Change	ASTM C1090[E]
Slump	AASHTO T 119

A. Applicable to grout with aggregate.
B. Applicable to Neat Cement Grout.
C. American National Standards Institute/American Petroleum Institute Recommended Practice.
D. Procedure A (Rapid Freezing and Thawing in Water) required.
E. Moist room storage required.

1003-4 GROUT REQUIREMENTS

Provide grout types in accordance with the contract. Use grouts with properties that meet Table 1003-2. The compressive strength of the grout will be considered the average compressive strength test results of three 2" cubes at each age. Make cubes that meet AASHTO T 106 from the grout delivered for the work or mixed on-site. Make cubes at such frequencies as the Engineer may determine and cure them in accordance with AASHTO T 106.

TABLE 1003-2
GROUT REQUIREMENTS

Type of Grout	Minimum Compressive Strength at		Height Change at 28 days	Flow[A]/Slump[B]	Minimum Durability Factor
	3 days	28 days			
1	3,000 psi	–	–	10 – 30 sec	–
2	Table 1[C]			Fluid Consistency[C]	–
3	5,000 psi	–	0 – 0.2%	Per Accepted Grout Mix Design/ Approved Packaged Grout	80
4[D]	600 psi	1,500 psi	–	10 – 26 sec	–
5	–	500 psi	–	1 – 3"	–

A. Applicable to Type 1 through 4 grouts.
B. Applicable to Type 5 grout.
C. ASTM C1107.
D. Use Type 4 grout with proportions by volume of 1 part cement and 3 parts fly ash.

1003-5 TEMPERATURE REQUIREMENTS

When using an approved packaged grout, follow the manufacturer's instructions for grout and air temperature at the time of placement. Otherwise, the grout temperature at the time of placement shall be not less than 50°F or more than 90°F. Do not place grout when the air temperature measured at the location of the grouting operation in the shade away from artificial heat is below 40°F.

1003-6 ELAPSED TIME FOR PLACING GROUT

Agitate grout continuously before placement. Regulate the delivery so the maximum interval between the placing of batches at the work site does not exceed 20 minutes. Place grout before exceeding the times in Table 1003-3. Measure the elapsed time as the time between adding the mixing water to the grout mix and placing the grout.

TABLE 1003-3
ELAPSED TIME FOR PLACING GROUT
(with continuous agitation)

Air or Grout Temperature, Whichever is Higher	Maximum Elapsed Time	
	No Retarding Admixture Used	Retarding Admixture Used
90°F or above	30 minutes	1 hr. 15 minutes
80°F through 89°F	45 minutes	1 hr. 30 minutes
79°F or below	60 minutes	1 hr. 45 minutes

1003-7 MIXING AND DELIVERY

Use grout free of any lumps and undispersed cement. When using an approved packaged grout, mix grout in accordance with the manufacturer's instructions. Otherwise, comply with Articles 1000-8 through 1000-12 to the extent applicable for grout instead of concrete.

GEOSYNTHETICS
(12-29-15) 1056 DB10 R25

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Replace Section 1056 with the following:

SECTION 1056
GEOSYNTHETICS

1056-1 DESCRIPTION

Provide geosynthetics for subsurface drainage, separation, stabilization, reinforcement, erosion control, filtration and other applications in accordance with the contract. Use geotextiles, geocomposite drains and geocells that are on the NCDOT Approved Products List. Prefabricated geocomposite drains include sheet, strip and vertical drains (PVDs), i.e., "wick drains" consisting of a geotextile attached to and / or encapsulating a plastic drainage core. Geocells are comprised of ultrasonically welded polymer strips that when expanded form a 3D honeycomb grid that is typically filled with material to support vegetation.

If necessary or required, hold geotextiles and sheet drains in place with new wire staples, e.g., "sod staples" that meet Subarticle 1060-8(D) or new anchor pins. Use steel anchor pins with a diameter of at least 3/16" and a length of at least 18" and with a point at one end and a head at the other end that will retain a steel washer with an outside diameter of at least 1.5".

1056-2 HANDLING AND STORING

Load, transport, unload and store geosynthetics so geosynthetics are kept clean and free of damage. Label, ship and store geosynthetics in accordance with Section 7 of AASHTO M 288. Geosynthetics with defects, flaws, deterioration or damage shall be rejected. Do not unwrap geosynthetics until just before installation. Do not leave geosynthetics exposed for more than seven days before covering except for geosynthetics for temporary wall faces and erosion control.

1056-3 CERTIFICATIONS

Provide Type 1, Type 2 or Type 4 material certifications in accordance with Article 106-3 for geosynthetics. Define "minimum average roll value" (MARV) in accordance with ASTM D4439. Provide certifications with MARV for geosynthetic properties as required. Test geosynthetics using laboratories accredited by the Geosynthetic Accreditation Institute (GAI) to perform the required test methods. Sample geosynthetics in accordance with ASTM D4354.

1056-4 GEOTEXTILES

When required, sew geotextiles together in accordance with Article X1.1.4 of AASHTO M 288. Provide sewn seams with seam strengths meeting the required strengths for the geotextile type and class specified.

Provide geotextile types and classes in accordance with the contract. Geotextiles shall be identified by the product name printed directly on the geotextile. When geotextiles are not marked with a product name or marked with only a manufacturing plant identification code, geotextiles shall be identified by product labels attached to the geotextile wrapping. When identification is based on labels instead of markings, unwrap geotextiles just before use in the presence of the Engineer to confirm that the product labels on both ends of the outside of the geotextile outer wrapping match the labels affixed to both ends of the inside of the geotextile roll core. Partial geotextile rolls without the product name printed on the geotextile or product labels affixed to the geotextile roll core shall not be used.

Use woven or nonwoven geotextiles with properties that meet Table 1056-1. Define “machine direction” (MD) and “cross-machine direction” (CD) in accordance with ASTM D4439.

TABLE 1056-1
GEOTEXTILE REQUIREMENTS

Property	**Requirement**					**Test Method**
	Type 1	**Type 2**	**Type 3[A]**	**Type 4**	**Type 5[B]**	
Typical Application	*Shoulder Drains*	*Under Rip Rap*	*Silt Fence Fabric*	*Soil Stabilization*	*Temporary Walls*	
Elongation (MD & CD)	≥ 50%	≥ 50%	≤ 25%	< 50%	< 50%	ASTM D4632
Grab Strength (MD & CD)	Table 1[D], Class 3	Table 1[D], Class 1	100 lb[C]	Table 1[D], Class 3	–	ASTM D4632
Tear Strength (MD & CD)			–			ASTM D4533
Puncture Strength			–			ASTM D6241
Ultimate Tensile Strength (MD & CD)	–	–	–	–	2,400 lb/ft[C] (unless required otherwise in the contract)	ASTM D4595
Permittivity	Table 2[D], 15% to 50% *in Situ* Soil Passing 0.075 mm	Table 6[D], 15% to 50% *in Situ* Soil Passing 0.075mm	Table 7[D]	Table 5[D]	0.20 sec^{-1},[C]	ASTM D4491
Apparent Opening Size					0.60 mm[E]	ASTM D4751
UV Stability (Retained Strength)					70%[C] (after 500 hr of exposure)	ASTM D4355

A. Minimum roll width of 36inches required
B. Minimum roll width of 13 feet required
C. MARV per Article 1056-3
D. AASHTO M 288
E. Maximum average roll value

1056-5 GEOCOMPOSITE DRAINS

Provide geocomposite drain types in accordance with the contract and with properties that meet Table 1056-2.

TABLE 1056-2 GEOCOMPOSITE DRAIN REQUIREMENTS				
Property	**Requirement**			**Test Method**
	Sheet Drain	**Strip Drain**	**Wick Drain**	
Width	≥ 12" (unless required otherwise in the contract)	12" ±1/4"	4" ±1/4"	N/A
In-Plane Flow Rate[A] (with gradient of 1.0 and 24-hour seating period)	6 gpm/ft @ applied normal compressive stress of 10 psi	15 gpm/ft @ applied normal compressive stress of 7.26 psi	1.5 gpm[B] @ applied normal compressive stress of 40 psi	ASTM D4716

A. MARV per Article 1056-3
B. Per 4" drain width

For sheet and strip drains, use accessories (e.g., pipe outlets, connectors, fittings, etc.) recommended by the Drain Manufacturer. Provide sheet and strip drains with Type 1 geotextiles heat bonded or glued to HDPE, polypropylene or high impact polystyrene drainage cores that meet Table 1056-3.

TABLE 1056-3 DRAINAGE CORE REQUIREMENTS			
Property	**Requirement (MARV)**		**Test Method**
	Sheet Drain	**Strip Drain**	
Thickness	1/4"	1"	ASTM D1777 or D5199
Compressive Strength	40 psi	30 psi	ASTM D6364

For wick drains with a geotextile wrapped around a corrugated drainage core and seamed to itself, use drainage cores with an ultimate tensile strength of at least 225 lb per 4-inch width in accordance with ASTM D4595 and geotextiles with properties that meet Table 1056-4.

TABLE 1056-4 WICK DRAIN GEOTEXTILE REQUIREMENTS		
Property	**Requirement**	**Test Method**
Elongation	≥ 50%	ASTM D4632
Grab Strength	Table 1[A], Class 3	ASTM D4632
Tear Strength		ASTM D4533
Puncture Strength		ASTM D6241
Permittivity	0.7 sec^{-1},[B]	ASTM D4491
Apparent Opening Size (AOS)	Table 2[A], > 50% *in Situ* Soil Passing 0.075 mm	ASTM D4751
UV Stability (Retained Strength)		ASTM D4355

A. AASHTO M 288
B. MARV per Article 1056-3

For wick drains with a geotextile fused to both faces of a corrugated drainage core along the peaks of the corrugations, use wick drains with an ultimate tensile strength of at least 1,650 lb/ft in accordance with ASTM D4595 and geotextiles with a permittivity, AOS and UV stability that meet Table 1056-4.

1056-6 GEOCELLS

Geocells shall be identified by product labels attached to the geocell wrapping. Unwrap geocells just before use in the presence of the Engineer. Previously opened geocell products shall be rejected.

Manufacture geocells from virgin polyethylene resin with no more than 10% rework, also called "regrind", materials. Use geocells made from textured and perforated HDPE strips with an open area of 10% to 20% and properties that meet Table 1056-5.

TABLE 1056-5 GEOCELL REQUIREMENTS		
Property	**Minimum Requirement**	**Test Method**
Cell Depth	4"	N/A
Sheet Thickness	50 mil -5%, +10%	ASTM D5199
Density	58.4 lb/cf	ASTM D1505
Carbon Black Content	1.5%	ASTM D1603 or D4218
ESCR[A]	5000 hr	ASTM D1693
Coefficient of Direct Sliding (with material that meets AASHTO M 145 for soil classification A-2)	0.85	ASTM D5321
Short-Term Seam (Peel) Strength (for 4" seam)	320 lb	USACE[C] Technical Report GL-86-19, Appendix A
Long-Term Seam (Hang) Strength[B] (for 4" seam)	160 lb	

A. Environmental Stress Crack Resistance
B. Minimum test period of 168 hours with a temperature change from 74°F to 130°F in one-hour cycles
C. US Army Corps of Engineers

Provide geocell accessories (e.g., stakes, pins, clips, staples, rings, tendons, anchors, deadmen, etc.) recommended by the Geocell Manufacturer.

TEMPORARY SHORING

(2-20-07) (Rev. 3-17-15) DB11 R02

Description

Temporary shoring includes cantilever, braced and anchored shoring and temporary mechanically stabilized earth (MSE) walls. Temporary shoring does not include trench boxes. At the Design-Build Team's option, use any type of temporary shoring, unless noted otherwise in the plans developed by the Design-Build Team or as directed.

Design and construct temporary shoring based on actual elevations and shoring dimensions in accordance with the plans developed by the Design-Build Team and accepted submittals. Construct temporary shoring at locations shown in the plans developed by the Design-Build Team and as directed. Temporary shoring shall be required to maintain traffic when a 2:1 (H:V) slope from the top of an embankment or bottom of an excavation will intersect the existing ground line less than five feet from the edge of pavement of an open travelway. This Standard Special Provision does not apply to pipe, inlet or utility installation unless noted otherwise in the plans developed by the Design-Build Team.

Positive protection includes concrete barrier and temporary guardrail. Provide positive protection for temporary shoring at locations shown in the plans developed by the Design-Build

Team and as directed. Positive protection shall be required if temporary shoring is located in the clear zone in accordance with the AASHTO *Roadside Design Guide.*

(A) Cantilever and Braced Shoring

Cantilever shoring consists of steel sheet piles or H-piles with timber lagging. Braced shoring consists of sheet piles or H-piles with timber lagging and bracing such as beams, plates, walers, struts, rakers, etc. Define "piles" as sheet piles or H-piles.

(B) Anchored Shoring

Anchored shoring consists of sheet piles with walers or H-piles with timber lagging anchored with ground or helical anchors. Driven anchors may be accepted at the discretion of the Engineer. A ground anchor consists of a grouted steel bar or multi-strand tendon with an anchorage. A helical anchor consists of a lead section with a central steel shaft and at least one helix steel plate followed by extensions with only central shafts (no helixes) and an anchorage. Anchorages consist of steel bearing plates with washers and hex nuts for bars or steel wedge plates and wedges for strands. Use a prequalified Anchored Wall Contractor to install ground anchors. Define "anchors" as ground, helical or driven anchors.

(C) Temporary MSE Walls

Temporary MSE walls include temporary geosynthetic and wire walls. Define "temporary wall" as a temporary MSE wall. Define "reinforcement" as geotextile, geogrid, welded wire grid or metallic strip reinforcement.

Temporary geosynthetic walls consist of geotextile or geogrid reinforcement wrapped behind welded wire facing. Define "temporary geotextile wall" as a temporary geosynthetic wall with geotextile reinforcement and "temporary geogrid wall" as a temporary geosynthetic wall with geogrid reinforcement.

Temporary wire walls consist of welded wire grid or metallic strip reinforcement connected to welded wire facing. Define "Wire Wall Vendor" as the vendor supplying the temporary wire wall.

(D) Embedment

Define "embedment" for cantilever, braced and anchored shoring as the pile depth below the grade in front of shoring. Define "embedment" for temporary walls as the wall height below the grade in front of walls.

(E) Positive Protection

Define "unanchored or anchored portable concrete barrier" as portable concrete barrier (PCB) that meets Standard Drawing No. 1170.01 of the 2012 *Roadway Standard*

Drawings. Define "concrete barrier" as unanchored or anchored PCB or an approved equal. Define "temporary guardrail" as temporary steel beam guardrail that meets Standard Drawing No. 862.02 of the 2012 *Roadway Standard Drawings*.

Materials

Refer to the 2012 *Standard Specifications for Roads and Structures*.

Item	Section
Anchor Pins	1056-2
Concrete Barrier Materials	1170-2
Flowable Fill, Excavatable	1000-6
Geotextiles	1056
Grout	1003
Portland Cement Concrete	1000
Select Material	1016
Steel Beam Guardrail Materials	862-2
Steel Plates	1072-2
Steel Sheet Piles and H-Piles	1084
Untreated Timber	1082-2
Welded Wire Reinforcement	1070-3
Wire Staples	1060-8(D)

Provide Type 6 material certifications for shoring materials in accordance with Article 106-3 of the 2012 *Standard Specifications for Roads and Structures*. Use Class IV select material (standard size No. ABC) for temporary guardrail. Use neat cement grout for Type 2 grout for ground anchors. Use Class A concrete that meets Article 450-2 of the 2012 *Standard Specifications for Roads and Structures* or Type 1 grout for drilled-in piles. Provide untreated timber with a thickness of at least 3" and a bending stress of at least 1,000 psi for timber lagging. Provide steel bracing that meets ASTM A36.

(A) Shoring Backfill

Use Class II, Type 1, Class III, Class V or Class VI select material or material that meets AASHTO M 145 for soil classification A-2-4 with a maximum PI of 6 for shoring backfill except do not use A-2-4 soil for backfill around culverts.

(B) Anchors

Store anchor materials on blocking a minimum of 12" above the ground and protect it at all times from damage; and when placing in the work make sure it is free from dirt, dust, loose mill scale, loose rust, paint, oil or other foreign materials. Load, transport, unload and store anchor materials so materials are kept clean and free of damage. Bent, damaged or defective materials will be rejected.

(1) Ground Anchors

Use high-strength deformed steel bars that meet AASHTO M 275 or seven-wire strands that meet ASTM A886 or Article 1070-5 of the 2012 *Standard Specifications for Roads and Structures*. Splice bars in accordance with Article 1070-9 of the 2012 *Standard Specifications for Roads and Structures*. Do not splice strands. Use bondbreakers, spacers and centralizers that meet Article 6.3.5 of the AASHTO *LRFD Bridge Construction Specifications*.

(2) Helical Anchors

Use helical anchors with an ICC Evaluation Service, Inc. (ICC-ES) report. Helical anchors without an ICC-ES report may be approved at the discretion of the Engineer. Provide couplers, thread bar adapters and bolts recommended by the Anchor Manufacturer to connect helical anchors together and to piles.

(3) Anchorages

Provide steel plates for bearing plates and steel washers, hex nuts, wedge plates and wedges recommended by the Anchor Manufacturer.

(C) Temporary Walls

(1) Welded Wire Facing

Use welded wire reinforcement for welded wire facing, struts and wires. For temporary wire walls, provide welded wire facing supplied by the Wire Wall Vendor or a manufacturer approved or licensed by the vendor. For temporary wire walls with separate reinforcement and facing components, provide connectors (e.g., bars, clamps, plates, etc.) and fasteners (e.g., bolts, nuts, washers, etc.) required by the Wire Wall Vendor.

(2) Geotextiles

Provide Type 2 geotextile for separation and retention geotextiles. Provide Type 5 geotextile for geotextile reinforcement with ultimate tensile strengths in accordance with the accepted submittals.

(3) Geogrid Reinforcement

Handle and store geogrids in accordance with Article 1056-2 of the 2012 *Standard Specifications for Roads and Structures*. Define “machine direction” (MD) and “cross-machine direction” (CD) for geogrids in accordance with ASTM D4439.

Use geogrids with a roll width of at least 4 feet and an "approved" or "approved for provisional use" status code. The list of approved geogrids is available from:

connect.ncdot.gov/resources/Materials/Pages/SoilsLaboratory.aspx

Provide geogrids for geogrid reinforcement with design strengths in accordance with the accepted submittals. Geogrids are typically approved for ultimate tensile strengths in the MD and CD or short-term design strengths for a three-year design life in the MD based on material type. Define material type from the website above for shoring backfill as follows:

Material Type	Shoring Backfill
Borrow	A-2-4 Soil
Fine Aggregate	Class II, Type 1 or Class III Select Material
Coarse Aggregate	Class V or VI Select Material

(4) Welded Wire Grid and Metallic Strip Reinforcement

Provide welded wire grid and metallic strip reinforcement supplied by the Wire Wall Vendor or a manufacturer approved or licensed by the vendor. Use welded wire grid reinforcement ("mesh", "mats" and "ladders") that meet Article 1070-3 of the 2012 *Standard Specifications for Roads and Structures* and metallic strip reinforcement ("straps") that meet ASTM A572 or A1011.

Preconstruction Requirements

(A) Concrete Barrier

Define "clear distance" behind concrete barrier as the horizontal distance between the barrier and edge of pavement. The minimum required clear distance for concrete barrier is shown in the plans developed by the Design-Build Team. At the Design-Build Team's option or if the minimum required clear distance is not available, set concrete barrier next to and up against traffic side of temporary shoring except for barrier above temporary walls. Concrete barrier with the minimum required clear distance shall be required above temporary walls.

(B) Temporary Guardrail

Define "clear distance" behind temporary guardrail as the horizontal distance between guardrail posts and temporary shoring. At the Design-Build Team's option or if clear distance for cantilever, braced and anchored shoring is less than 4 feet, attach guardrail to traffic side of shoring as shown in the plans developed by the Design-Build Team. Place ABC in clear distance and around guardrail posts instead of pavement. Do not use temporary guardrail above temporary walls.

(C) Temporary Shoring Designs

Before beginning temporary shoring design, survey existing ground elevations in the vicinity of shoring locations to determine actual design heights (H). Submit 8 copies of working drawings and three copies of design calculations and a PDF copy of each for temporary shoring designs in accordance with Article 105-2 of the 2012 *Standard Specifications for Roads and Structures*. Submit working drawings showing plan views, shoring profiles, typical sections and details of temporary shoring design and construction sequence. Do not begin shoring construction until a design submittal is accepted.

Have cantilever and braced shoring designed, detailed and sealed by an engineer licensed in the state of North Carolina. Use a prequalified Anchored Wall Design Consultant to design anchored shoring. Provide anchored shoring designs sealed by a Design Engineer approved as a Geotechnical Engineer (key person) for an Anchored Wall Design Consultant. Include details in anchored shoring working drawings of anchor locations and lock-off loads, unit grout / ground bond strengths for ground anchors or minimum installation torque and torsional strength rating for helical anchors and if necessary, obstructions extending through shoring or interfering with anchors. Include details in the anchored shoring construction sequence of pile and anchor installation, excavation and anchor testing.

Use a prequalified MSE Wall Design Consultant to design temporary walls. Provide temporary wall designs sealed by a Design Engineer approved as a Geotechnical Engineer (key person) for the MSE Wall Design Consultant. Include details in temporary wall working drawings of geotextile and reinforcement types, locations and directions and obstructions extending through walls or interfering with reinforcement.

(1) Soil Parameters

Design temporary shoring for the assumed soil parameters and groundwater elevations shown in the plans. Assume the following soil parameters for shoring backfill:

(a) Unit weight (γ) = 120 lb/cf;

(b)

Friction Angle (ϕ)	**Shoring Backfill**
30°	A-2-4 Soil
34°	Class II, Type 1 or Class III Select Material
38°	Class V or VI Select Material

(c) Cohesion (c) = 0 lb/sf.

(2) Traffic Surcharge

Design temporary shoring for a traffic surcharge of 250 lb/sf if traffic will be above and within H of shoring. This traffic surcharge shall not apply to

construction traffic. Design temporary shoring for any construction surcharge if construction traffic will be above and within H of shoring. For LRFD shoring designs, apply traffic (live load) surcharge in accordance with Figure C11.5.5-3 of the AASHTO *LRFD Bridge Design Specifications*.

(3) Cantilever, Braced and Anchored Shoring Designs

Use shoring backfill for fill sections and voids between cantilever, braced and anchored shoring and the critical failure surface. Use concrete or grout for embedded portions of drilled-in H-piles. Do not use drilled-in sheet piles.

Define "top of shoring" for cantilever, braced and anchored shoring as where the grade intersects the back of sheet piles or H-piles and timber lagging. Design cantilever, braced and anchored shoring for a traffic impact load of 2,000 lb/ft applied 18" above top of shoring if concrete barrier is above and next to shoring or temporary guardrail is above and attached to shoring. For anchored shoring designs, apply traffic impact load as horizontal load (P_{H1}) in accordance with Figure 3.11.6.3-2(a) of the AASHTO LRFD specifications.

Extend cantilever, braced and anchored shoring at least 32" above top of shoring if shoring is designed for traffic impact. Otherwise, extend shoring at least 6" above top of shoring.

Design cantilever, braced and anchored shoring for a maximum deflection of 3" if the horizontal distance to the closest edge of pavement or structure is less than H. Otherwise, design shoring for a maximum deflection of 6". Design cantilever and braced shoring in accordance with the plans developed by the Design-Build Team and AASHTO *Guide Design Specifications for Bridge Temporary Works*.

Design anchored shoring in accordance with the plans developed by the Design-Build Team and Article 11.9 of the AASHTO *LRFD Bridge Design Specifications*. Use a resistance factor of 0.80 for tensile resistance of anchors with bars, strands or shafts. Extend the unbonded length for ground anchors and the shallowest helix for helical anchors at least five feet behind the critical failure surface. Do not extend anchors beyond right of way or easement limits. If existing or future obstructions such as foundations, guardrail posts, pavements, pipes, inlets or utilities will interfere with anchors, maintain a clearance of at least 6" between obstructions and anchors.

(4) Temporary Wall Designs

Use shoring backfill in the reinforced zone of temporary walls. Separation geotextiles are required between shoring backfill and backfill, natural ground or culverts along the sides of the reinforced zone perpendicular to the wall face. For Class V or VI select material in the reinforced zone, separation geotextiles are

also required between shoring backfill and backfill or natural ground on top of and at the back of the reinforced zone.

Design temporary walls in accordance with the plans developed by the Design-Build Team and Article 11.10 of the AASHTO *LRFD Bridge Design Specifications*. Embed temporary walls at least 18" except for walls on structures or rock as determined by the Engineer. Use a uniform reinforcement length throughout the wall height of at least 0.7H or six feet, whichever is longer. Extend the reinforced zone at least 6" beyond end of reinforcement. Do not locate the reinforced zone outside right of way or easement limits.

Use the simplified method for determining maximum reinforcement loads in accordance with the AASHTO LRFD specifications. For geotextile reinforcement, use geotextile properties approved by the Department or default values in accordance with the AASHTO LRFD specifications. For geogrid reinforcement, use approved geogrid properties available from the website shown elsewhere in this provision. If the website does not list a short-term design strength for an approved geogrid, use a short-term design strength equal to the ultimate tensile strength divided by 3.5 for the geogrid reinforcement. Use geosynthetic properties for the direction reinforcement will be installed, a three-year design life and shoring backfill to be used in the reinforced zone.

Do not use more than four different reinforcement strengths for each temporary geosynthetic wall. Design temporary geotextile walls for a reinforcement coverage ratio (R_c) of 1.0 and temporary geogrid walls for an R_c of at least 0.8. For geogrid reinforcement with an R_c of less than 1.0, use a maximum horizontal clearance between geogrids of three feet and stagger reinforcement so geogrids are centered over gaps in the reinforcement layer below.

For temporary geosynthetic walls, use “L” shaped welded wire facing with 18" to 24" long legs. Locate geotextile or geogrid reinforcement so reinforcement layers are at the same level as the horizontal legs of welded wire facing. Use vertical reinforcement spacing equal to facing height. Wrap geotextile or geogrid reinforcement behind welded wire facing and extend reinforcement at least three feet back behind facing into shoring backfill.

For temporary wire walls with separate reinforcement and facing components, attach welded wire grid or metallic strip reinforcement to welded wire facing with a connection approved by the Department. For temporary geogrid and wire walls, retain shoring backfill at welded wire facing with retention geotextiles and extend geotextiles at least three feet back behind facing into backfill.

(D) Preconstruction Meeting

The Engineer may require a shoring preconstruction meeting to discuss the construction, inspection and testing of the temporary shoring. If required and if this meeting occurs

before all shoring submittals have been accepted, additional preconstruction meetings may be required before beginning construction of temporary shoring without accepted submittals. The Resident, District or Bridge Maintenance Engineer, Bridge or Roadway Construction Engineer, Geotechnical Operations Engineer, Design-Build Team and Shoring Contractor Superintendent will attend preconstruction meetings.

Construction Methods

Control drainage during construction in the vicinity of shoring. Direct run off away from shoring and shoring backfill. Contain and maintain backfill and protect material from erosion.

Install positive protection in accordance with the contract and accepted submittals. Use PCB in accordance with Section 1170 of the 2012 *Standard Specifications for Roads and Structures* and 2012 *Roadway Standard Drawing* No. 1170.01. Use temporary guardrail in accordance with Section 862 of the 2012 *Standard Specifications for Roads and Structures* and 2012 *Roadway Standard Drawing* Nos. 862.01, 862.02 and 862.03.

(A) Tolerances

Construct shoring with the following tolerances:

(1) Horizontal wires of welded wire facing are level in all directions,

(2) Shoring location is within 6" of horizontal and vertical alignment shown in the accepted submittals, and

(3) Shoring plumbness (batter) is not negative and within 2° of vertical.

(B) Cantilever, Braced and Anchored Shoring Installation

If overexcavation behind cantilever, braced or anchored shoring is shown in the accepted submittals, excavate before installing piles. Otherwise, install piles before excavating for shoring. Install cantilever, braced or anchored shoring in accordance with the construction sequence shown in the accepted submittals. Remove piles and if applicable, timber lagging when shoring is no longer needed.

(1) Pile Installation

Install piles with the minimum required embedment and extension in accordance with Subarticles 450-3(D) and 450-3(E) of the 2012 *Standard Specifications for Roads and Structures* except that a pile driving equipment data form is not required. Piles may be installed with a vibratory hammer as approved by the Engineer.

Do not splice sheet piles. Use pile excavation to install drilled-in H-piles. After filling holes with concrete or grout to the elevations shown in the accepted

submittals, remove any fluids and fill remaining portions of holes with flowable fill. Cure concrete or grout at least seven days before excavating.

Notify the Engineer if refusal is reached before pile excavation or driven piles attain the minimum required embedment. When this occurs, a revised design submittal may be required.

(2) Excavation

Excavate in front of piles from the top down in accordance with the accepted submittals. For H-piles with timber lagging and braced and anchored shoring, excavate in staged horizontal lifts with a maximum height of five feet Remove flowable fill and material in between H-piles as needed to install timber lagging. Position lagging with at least 3" of contact in the horizontal direction between the lagging and pile flanges. Do not excavate the next lift until timber lagging for the current lift is installed and if applicable, bracing and anchors for the current lift are accepted. Backfill behind cantilever, braced or anchored shoring with shoring backfill.

(3) Anchor Installation

If applicable, install foundations located behind anchored shoring before installing anchors. Fabricate and install ground anchors in accordance with the accepted submittals, Articles 6.4 and 6.5 of the AASHTO *LRFD Bridge Construction Specifications* and the following unless otherwise approved:

(a) Materials in accordance with this provision shall be required instead of materials conforming to Articles 6.4 and 6.5.3 of the AASHTO LRFD Specifications,

(b) Encapsulation-protected ground anchors in accordance with Article 6.4.1.2 of the AASHTO LRFD specifications are not required, and

(c) Corrosion protection for unbonded lengths of ground anchors and anchorage covers are not required.

(d) Measure grout temperature, density and flow during grouting with at least the same frequency grout cubes are made for compressive strength. Perform density and flow field tests in the presence of the Engineer in accordance with American National Standards Institute / American Petroleum Institute Recommended Practice 13B-1 (Section 4, Mud Balance) and ASTM C939 (Flow Cone), respectively.

Install helical anchors in accordance with the accepted submittals and Anchor Manufacturer’s instructions. Measure torque during installation and do not exceed the torsional strength rating of the helical anchor. Attain the minimum

required installation torque and penetration before terminating anchor installation. When replacing a helical anchor, embed last helix of the replacement anchor at least 3 helix plate diameters past the location of the first helix of the previous anchor.

(4) Anchor Testing

Proof test and lock-off anchors in accordance with the accepted submittals and Article 6.5.5 of the AASHTO *LRFD Bridge Construction Specifications* except for the acceptance criteria in Article 6.5.5.5. For the AASHTO LRFD specifications, "ground anchor" refers to a ground or helical anchor and "tendon" refers to a bar, strand or shaft.

(a) Anchor Acceptance

Anchor acceptance is based in part on the following criteria.

(i) For ground and helical anchors, total movement is less than 0.04" between the 1 and 10 minute readings or less than 0.08" between the 6 and 60 minute readings.

(ii) For ground anchors, total movement at maximum test load exceeds 80% of the theoretical elastic elongation of the unbonded length.

(b) Anchor Test Results

Submit two copies of anchor test records including movement versus load plots for each load increment within 24 hours of completing each row of anchors. The Engineer will review the test records to determine if the anchors are acceptable.

If the Engineer determines an anchor is unacceptable, revise the anchor design or installation methods. Submit a revised anchored shoring design for acceptance and provide an acceptable anchor with the revised design or installation methods. If required, replace the anchor or provide additional anchors with the revised design or installation methods.

(C) Temporary Wall Installation

Excavate as necessary for temporary walls in accordance with the plans developed by the Design-Build Team and accepted submittals. If applicable, install foundations located in the reinforced zone before placing shoring backfill or reinforcement unless otherwise approved. Notify the Engineer when foundation excavation is complete. Do not place shoring backfill or reinforcement until excavation dimensions and foundation material are approved.

Erect welded wire facing so the wall position is as shown in the plans developed by the Design-Build Team and accepted submittals. Set welded wire facing adjacent to each other in the horizontal and vertical direction to completely cover the wall face with facing. Stagger welded wire facing to create a running bond by centering facing over joints in the row below.

Wrap geotextile reinforcement and retention geotextiles behind welded wire facing as shown in the plans developed by the Design-Build Team and accepted submittals, and cover geotextiles with at least 3" of shoring backfill. Overlap adjacent geotextile reinforcement and retention and separation geotextiles at least 18" with seams oriented perpendicular to the wall face. Hold geotextiles in place with wire staples or anchor pins as needed.

Place reinforcement within 3" of locations shown in the plans developed by the Design-Build Team and accepted submittals, and in slight tension free of kinks, folds, wrinkles or creases. Install reinforcement with the direction shown in the plans developed by the Design-Build Team and accepted submittals. For temporary wire walls with separate reinforcement and facing components, attach welded wire grid or metallic strip reinforcement to welded wire facing as shown in the accepted submittals. Do not splice or overlap reinforcement so seams are parallel to the wall face. Contact the Engineer when unanticipated existing or future obstructions such as foundations, pavements, pipes, inlets or utilities will interfere with reinforcement.

Place shoring backfill in the reinforced zone in 8" to 10" thick lifts. Compact A-2-4 soil and Class II, Type 1 and Class III select material in accordance with Subarticle 235-3(C) of the 2012 *Standard Specifications for Roads and Structures*. Use only hand operated compaction equipment to compact backfill within 3 feet of welded wire facing. At a distance greater than 3 feet, compact shoring backfill with at least four passes of an eight-ton to ten-ton vibratory roller in a direction parallel to the wall face. Smooth wheeled or rubber tired rollers are also acceptable for compacting backfill. Do not use sheepsfoot, grid rollers or other types of compaction equipment with feet. Do not displace or damage reinforcement when placing and compacting shoring backfill. End dumping directly on geotextile or geogrid reinforcement shall not be permitted. Do not operate heavy equipment on reinforcement until it is covered with at least 8" of shoring backfill. Replace any damaged reinforcement to the satisfaction of the Engineer.

Backfill for temporary walls outside the reinforced zone in accordance with Article 410-8 of the 2012 *Standard Specifications for Roads and Structures*. Bench temporary walls into the sides of excavations where applicable. For temporary geosynthetic walls with top of wall within five feet of finished grade, remove top facing and incorporate top reinforcement layer into fill when placing fill in front of wall. Temporary walls remain in place permanently unless otherwise required.

GROUT REFERENCES FOR POSITIVE PROTECTION:

(4-16-15) 1170 DB11 R20

Revise the *2012 Standard Specifications* as follows:

Page 11-14, Article 1170-2, Materials, line 30, in the materials table, replace "Freeze-Thaw Durable Grout, Nonshrink" with "Grout, Type 3".

Page 11-14, Article 1170-2, Materials, lines 31-32, delete the first paragraph after the materials table.

ON-THE-JOB TRAINING

(2-24-15) (Rev. 3-2-15) Z-10

Description

The North Carolina Department of Transportation will administer a custom version of the Federal On-the-Job Training (OJT) Program, commonly referred to as the Alternate OJT Program. All contractors (existing and newcomers) will be automatically placed in the Alternate Program. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level. Instead, these requirements will be applicable on an annual basis for each contractor administered by the OJT Program Manager.

On the Job Training shall meet the requirements of 23 CFR 230.107 (b), 23 USC – Section 140, this provision and the On-the-Job Training Program Manual.

The Alternate OJT Program will allow a contractor to train employees on Federal, State and privately funded projects located in North Carolina. However, priority shall be given to training employees on NCDOT Federal-Aid funded projects.

Minorities and Women

Developing, training and upgrading of minorities and women toward journeyman level status is a primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority and women as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Manager, will assign training goals for a calendar year based on the contractors' past three years' activity and the contractors' anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties.

The number of training assignments may range from 1 to 15 per contractor per calendar year. The Contractor shall sign an agreement to fulfill their annual goal for the year.

Training Classifications

The Contractor shall provide on-the-job training aimed at developing full journeyman level workers in the construction craft/operator positions. Preference shall be given to providing training in the following skilled work classifications:

Equipment Operators	Office Engineers
Truck Drivers	Estimators
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

The Department has established common training classifications and their respective training requirements that may be used by the contractors. However, the classifications established are not all-inclusive. Where the training is oriented toward construction applications, training will be allowed in lower-level management positions such as office engineers and estimators. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance to FHWA the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and

The number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

The Contractor may allow trainees to be trained by a subcontractor provided that the Contractor retains primary responsibility for meeting the training and this provision is made applicable to the subcontract. However, only the Contractor will receive credit towards the annual goal for the trainee.

Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment, monthly and completion reports documenting company compliance under these contract documents. These documents and any other information as requested shall be submitted to the OJT Program Manager.

Upon completion and graduation of the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

All trainees enrolled in the program will receive an initial and Trainee/Post graduate interview conducted by the OJT program staff.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no instance shall a trainee be paid less than the local minimum wage. The Contractor shall adhere to the minimum hourly wage rate that will satisfy both the NC Department of Labor (NCDOL) and the Department.

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and who receives training for at least 50 percent of the specific program requirement. Trainees will be allowed to be transferred between projects if required by the Contractor's scheduled workload to meet training goals.

If a contractor fails to attain their training assignments for the calendar year, they may be taken off the NCDOT's Bidders List.

Measurement and Payment

No compensation will be made for providing required training in accordance with these contract documents.

STANDARD SPECIAL PROVISION

AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS

(9-1-11) Z-2

General Statute 143C-6-11. (h) Highway Appropriation is hereby incorporated verbatim in this contract as follows:

"(h) Amounts Encumbered – Transportation project appropriations may be encumbered in the amount of allotments made to the Department of Transportation by the Director for the estimated payments for transportation project contract work to be performed in the appropriation fiscal year. The allotments shall be multiyear allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in *General Statute 143C-6-11(c).* Payment for transportation project work performed pursuant to contract in any fiscal year other than the current fiscal year is subject to appropriations by the General Assembly. Transportation project contracts shall contain a schedule of estimated completion progress, and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any transportation project contract, and any transportation project contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of scheduled work for which funds are available. In the event of termination, the contractor shall be paid for the work already performed in accordance with the contract specifications."

Payment will be made on any contract terminated pursuant to the special provision in accordance with Article 108-13(E), of the *North Carolina Department of Transportation Standard Specifications for Roads and Structures*, dated January 2012 and as amended by the Standard Special Provision, Division One found elsewhere in this RFP.

***** STANDARD SPECIAL PROVISIONS *****

NCDOT GENERAL SEED SPECIFICATIONS FOR SEED QUALITY

(5-7-11) Z-3

Seed shall be sampled and tested by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory. When said samples are collected, the vendor shall supply an independent laboratory report for each lot to be tested. Results from seed so sampled shall be final. Seed not meeting the specifications shall be rejected by the Department of Transportation and shall not be delivered to North Carolina Department of Transportation warehouses. If seed has been delivered it shall be available for pickup and replacement at the supplier's expense.

Any re-labeling required by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory, that would cause the label to reflect as otherwise specified herein shall be rejected by the North Carolina Department of Transportation.

Seed shall be free from seeds of the noxious weeds Johnsongrass, Balloonvine, Jimsonweed, Witchweed, Itchgrass, Serrated Tussock, Showy Crotalaria, Smooth Crotalaria, Sicklepod, Sandbur, Wild Onion, and Wild Garlic. Seed shall not be labeled with the above weed species on the seed analysis label. Tolerances as applied by the Association of Official Seed Analysts will NOT be allowed for the above noxious weeds except for Wild Onion and Wild Garlic.

Tolerances established by the Association of Official Seed Analysts will generally be recognized. However, for the purpose of figuring pure live seed, the found pure seed and found germination percentages as reported by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory will be used. Allowances, as established by the NCDOT, will be recognized for minimum pure live seed as listed on the following pages.

The specifications for restricted noxious weed seed refers to the number per pound as follows:

Restricted Noxious Weed	Limitations per Lb. of Seed	Restricted Noxious Weed	Limitations per Lb. of Seed
Blessed Thistle	4 seeds	Cornflower (Ragged Robin)	27 seeds
Cocklebur	4 seeds	Texas Panicum	27 seeds
Spurred Anoda	4 seeds	Bracted Plantain	54 seeds
Velvetleaf	4 seeds	Buckhorn Plantain	54 seeds
Morning-glory	8 seeds	Broadleaf Dock	54 seeds
Corn Cockle	10 seeds	Curly Dock	54 seeds
Wild Radish	12 seeds	Dodder	54 seeds
Purple Nutsedge	27 seeds	Giant Foxtail	54 seeds
Yellow Nutsedge	27 seeds	Horsenettle	54 seeds
Canada Thistle	27 seeds	Quackgrass	54 seeds
Field Bindweed	27 seeds	Wild Mustard	54 seeds
Hedge Bindweed	27 seeds		

Seed of Pensacola Bahiagrass shall not contain more than 7% inert matter, Kentucky Bluegrass, Centipede and Fine or Hard Fescue shall not contain more than 5% inert matter whereas a maximum of 2% inert matter will be allowed on all other kinds of seed. In addition, all seed shall not contain more than 2% other crop seed nor more than 1% total weed seed. The germination rate as tested by the North Carolina Department of Agriculture shall not fall below 70%, which includes both dormant and hard seed. Seed shall be labeled with not more than 7%, 5% or 2% inert matter (according to above specifications), 2% other crop seed and 1% total weed seed.

Exceptions may be made for minimum pure live seed allowances when cases of seed variety shortages are verified. Pure live seed percentages will be applied in a verified shortage situation. Those purchase orders of deficient seed lots will be credited with the percentage that the seed is deficient.

FURTHER SPECIFICATIONS FOR EACH SEED GROUP ARE GIVEN BELOW:

Minimum 85% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 83% pure live seed will not be approved.

Sericea Lespedeza
Oats (seeds)

Minimum 80% pure live seed; maximum 1% total weed seed; maximum 2% total other crop; maximum 144 restricted noxious weed seed per pound. Seed less than 78% pure live seed will not be approved.

Tall Fescue (all approved varieties)
Kobe Lespedeza
Korean Lespedeza
Weeping Lovegrass
Carpetgrass
Bermudagrass
Browntop Millet
German Millet - Strain R
Clover - Red/White/Crimson

Minimum 78% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 76% pure live seed will not be approved.

Common or Sweet Sundangrass

Minimum 76% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 74% pure live seed will not be approved.

Rye (grain; all varieties)
Kentucky Bluegrass (all approved varieties)
Hard Fescue (all approved varieties)
Shrub (bicolor) Lespedeza

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 noxious weed seed per pound. Seed less than 70% pure live seed will not be approved.

Centipedegrass
Crownvetch
Pensacola Bahiagrass
Creeping Red Fescue
Japanese Millet
Reed Canary Grass
Zoysia

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 5% inert matter;maximum 144 restricted noxious weed seed per pound.

Barnyard Grass
Big Bluestem
Little Bluestem
Bristly Locust
Birdsfoot Trefoil
Indiangrass
Orchardgrass
Switchgrass
Yellow Blossom Sweet Clover

STANDARD SPECIAL PROVISION

ERRATA

(02-24-15) (Rev.03/02/15) Z-4

Revise the 2012 *Standard Specifications for Roads and Structures* as follows:

Division 2

Page 2-7, line 31, Article 215-2 Construction Methods, replace "Article 107-26" with "Article 107-25".

Page 2-17, Article 226-3, Measurement and Payment, line 2, delete "pipe culverts,".

Page 2-20, Subarticle 230-4(B), Contractor Furnished Sources, change references as follows: Line 1, replace "(4) Buffer Zone" with "(c) Buffer Zone"; **Line 12,** replace "(5) Evaluation for Potential Wetlands and Endangered Species" with "(d) Evaluation for Potential Wetlands and Endangered Species"; and **Line 33,** replace "(6) Approval" with "(4) Approval".

Division 3

Page 3-1, after line 15, Article 300-2 Materials, replace "1032-9(F)" with "1032-6(F)".

Division 4

Page 4-77, line 27, Subarticle 452-3(C) Concrete Coping, replace "sheet pile" with "reinforcement".

Division 6

Page 6-7, line 31, Article 609-3 Field Verification of Mixture and Job Mix Formula Adjustments, replace "30" with "45".

Page 6-10, line 42, Subarticle 609-6(C)(2), replace "Subarticle 609-6(E)" with "Subarticle 609-6(D)".

Page 6-11, Table 609-1 Control Limits, replace "Max. Spec. Limit" for the Target Source of $P_{0.075}/P_{be}$ Ratio with "1.0".

Page 6-40, Article 650-2 Materials, replace "Subarticle 1012-1(F)" with "Subarticle 1012-1(E)"

Division 7

Page 7-1, Article 700-3, CONCRETE HAULING EQUIPMENT, line 33, replace "competion" with "completion".

Division 8

Page 8-23, line 10, Article 838-2 Materials, replace "Portland Cement Concrete, Class B" with "Portland Cement Concrete, Class A".

Division 10

Page 10-166, Article 1081-3 Hot Bitumen, replace "Table 1081-16" with "Table 1081-2", replace "Table 1081-17" with "Table 1081-3", and replace "Table 1081-18" with "Table 1081-4".

Division 12

Page 12-7, Table 1205-3, add "FOR THERMOPLASTIC" to the end of the title.

Page 12-8, Subarticle 1205-5(B), line 13, replace "Table 1205-2" with "Table 1205-4".

Page 12-8, Table 1205-4 and 1205-5, replace "THERMOPLASTIC" in the title of these tables with "POLYUREA".

Page 12-9, Subarticle 1205-6(B), line 21, replace "Table 1205-4" with "Table 1205-6".

Page 12-11, Subarticle 1205-8(C), line 25, replace "Table 1205-5" with "Table 1205-7".

Division 15

Page 15-4, Subarticle 1505-3(F) Backfilling, line 26, replace "Subarticle 235-4(C)" with "Subarticle 235-3(C)".

Page 15-6, Subarticle 1510-3(B), after line 21, replace the allowable leakage formula with the following: $\boldsymbol{W = LD\sqrt{P} \div 148,000}$

Page 15-6, Subarticle 1510-3(B), line 32, delete "may be performed concurrently or" and replace with "shall be performed".

Page 15-17, Subarticle 1540-3(E), line 27, delete "Type 1".

Division 17

Page 17-26, line 42, Subarticle 1731-3(D) Termination and Splicing within Interconnect Center, delete this subarticle.

Revise the 2012 *Roadway Standard Drawings* as follows:

1633.01 Sheet 1 of 1, English Standard Drawing for Matting Installation, replace "1633.01" with "1631.01".

***** STANDARD SPECIAL PROVISIONS *****

AWARD OF CONTRACT

(6-28-77)(Rev. 1-8-16) Z-6

"The North Carolina Department of Transportation, in accordance with the provisions of *Title VI of the Civil Rights Act of 1964* (78 Stat. 252) and the Regulations of the Department of Transportation (*49 C.F.R., Part 21*), issued pursuant to such act, hereby notifies all bidders that it will affirmatively insure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the ground of race, color, or national origin".

TITLE VI AND NONDISCRIMINATION

I. Title VI Assurance

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(1) Compliance with Regulations: The contractor shall comply with the Regulation relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

(2) Nondiscrimination: The Contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

(3) Solicitations for Subcontractors, Including Procurements of Materials and Equipment: In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

(4) Information and Reports: The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto, and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the North Carolina Department of Transportation (NCDOT) or the Federal Highway Administration (FHWA) to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the NCDOT, or the FHWA as appropriate, and shall set forth what efforts it has made to obtain the information.

(5) Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the NCDOT shall impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:

(a) Withholding of payments to the contractor under the contract until the contractor complies, and / or
(b) Cancellation, termination or suspension of the contract, in whole or in part.

(6) Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto.

The contractor shall take such action with respect to any subcontractor procurement as the NCDOT or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance: provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the NCDOT to enter into such litigation to protect the interests of the NCDOT, and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

II. Title VI Nondiscrimination Program

Title VI of the 1964 Civil Rights Act, 42 U.S.C. 2000d, provides that: "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." The broader application of nondiscrimination law is found in other statutes, executive orders, and regulations (see Section III, Pertinent Nondiscrimination Authorities), which provide additional protections based on age, sex, disability and religion. In addition, the 1987 Civil Rights Restoration Act extends nondiscrimination coverage to all programs and activities of federal-aid recipients and contractors, including those that are not federally-funded.

Nondiscrimination Assurance

The North Carolina Department of Transportation (NCDOT) hereby gives assurance that no person shall on the ground of race, color, national origin, sex, age, and disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity conducted by the recipient, as provided by Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and any other related Civil Rights authorities, whether those programs and activities are federally funded or not.

Obligation

During the performance of this contract, the Contractor and its subcontractors are responsible for complying with NCDOT's Title VI Program. The Contractor must ensure that NCDOT's Notice

of Nondiscrimination is posted in conspicuous locations accessible to all employees and subcontractors on the jobsite, along with the Contractor's own Equal Employment Opportunity (EEO) Policy Statement. The Contractor shall physically incorporate this "**TITLE VI AND NONDISCRIMINATION**" language, in its entirety, into all its subcontracts on federally-assisted and state-funded NCDOT-owned projects, and ensure its inclusion by subcontractors into all subsequent lower tier subcontracts. The Contractor and its subcontractors shall also physically incorporate the **FHWA-1273**, in its entirety, into all subcontracts and subsequent lower tier subcontracts on **Federal-aid highway** construction contracts only. The Contractor is also responsible for making its subcontractors aware of NCDOT's Discrimination Complaints Process, as follows:

FILING OF COMPLAINTS

1. **Applicability** – These complaint procedures apply to the beneficiaries of the NCDOT's programs, activities, and services, including, but not limited to, members of the public, contractors, subcontractors, consultants, and other sub-recipients of federal and state funds.

2. **Eligibility** – Any person or class of persons who believes he/she has been subjected to discrimination or retaliation prohibited by any of the Civil Rights authorities, based upon race, color, sex, age, national origin, or disability, may file a written complaint with NCDOT's Civil Rights office. The law prohibits intimidation or retaliation of any sort. The complaint may be filed by the affected individual or a representative, and must be in writing.

3. **Time Limits and Filing Options** – A complaint must be filed no later than 180 calendar days after the following:

   - The date of the alleged act of discrimination; or
   - The date when the person(s) became aware of the alleged discrimination; or
   - Where there has been a continuing course of conduct, the date on which that conduct was discontinued or the latest instance of the conduct.

   Title VI and other discrimination complaints may be submitted to the following entities:

   - **North Carolina Department of Transportation**, Office of Equal Opportunity & Workforce Services (EOWS), External Civil Rights Section, 1511 Mail Service Center, Raleigh, NC 27699-1511; 919-508-1808 or toll free 800-522-0453

   - **US Department of Transportation**, Departmental Office of Civil Rights, External Civil Rights Programs Division, 1200 New Jersey Avenue, SE, Washington, DC 20590; 202-366-4070

     Federal Highway Administration, North Carolina Division Office, 310 New Bern Avenue, Suite 410, Raleigh, NC 27601, 919-747-7010

Federal Highway Administration, Office of Civil Rights, 1200 New Jersey Avenue, SE, 8th Floor, E81-314, Washington, DC 20590, 202-366-0693 / 366-0752

Federal Transit Administration, Office of Civil Rights, ATTN: Title VI Program Coordinator, East Bldg. 5th Floor – TCR, 1200 New Jersey Avenue, SE, Washington, DC 20590

Federal Aviation Administration, Office of Civil Rights, 800 Independence Avenue, SW, Washington, DC 20591, 202-267-3258

- **US Department of Justice**, Special Litigation Section, Civil Rights Division, 950 Pennsylvania Avenue, NW, Washington, DC 20530, 202-514-6255 or toll free 877-218-5228

4. **Format for Complaints –** Complaints must be in **writing** and **signed** by the complainant(s) or a representative and include the complainant's name, address, and telephone number. Complaints received by fax or e-mail will be acknowledged and processed. Allegations received by telephone will be reduced to writing and provided to the complainant for confirmation or revision before processing. Complaints will be accepted in other languages including Braille.

5. **Discrimination Complaint Form –** Contact NCDOT EOWS at the phone number above to receive a full copy of the Discrimination Complaint Form and procedures.

6. **Complaint Basis –** Allegations must be based on issues involving race, color, national origin, sex, age, or disability. The term "basis" refers to the complainant's membership in a protected group category. Contact this office to receive a Discrimination Complaint Form.

Protected Categories	Definition	Examples	Applicable Statutes and Regulations	
			FHWA	FTA
Race	An individual belonging to one of the accepted racial groups; or the perception, based usually on physical characteristics that a person is a member of a racial group	Black / African American, Hispanic / Latino, Asian, American Indian / Alaska Native, Native Hawaiian / Pacific Islander / White	Title VI of the Civil Rights Act of 1964; 49 CFR Part 21; 23 CFR 200	Title VI of the Civil Rights Act of 1964; 49 CFR Part 21; Circular 4702.1B
Color	Color of skin, including shade of skin within a racial group	Black / White /Bbrown / Yellow / etc.		
National Origin	Place of birth. Citizenship is not a factor. Discrimination based on language or a person's accent is also covered.	Mexican / Cuban / Japanese / Vietnamese / Chinese		
Sex	Gender	Women and Men	1973 Federal-Aid Highway Act	Title IX of the Education Amendments of 1972
Age	Persons of any age	21 year old person	Age Discrimination Act of 1975	
Disability	Physical or mental impairment, permanent or temporary or perceived.	Blind / Alcoholic / Para-amputee / Epileptic / Diabetic / Arthritic	Section 504 of the Rehabilitation Act of 1973; Americans with Disabilities Act of 1990	

III. Pertinent Nondiscrimination Authorities

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest agrees to comply with the following non-discrimination statutes and authorities, including, but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq*., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq*.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq*.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq*.), (prohibits discrimination on the basis of age);

- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).
- Title VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000e *et seq.*, Pub. L. 88-352), (prohibits employment discrimination on the basis of race, color, religion, sex, or national origin);
- 49 CFR Part 26, regulation to ensure nondiscrimination in the award and administration of DOT-assisted contracts in the Department's highway, transit, and airport financial assistance programs, as regards the use of Disadvantaged Business Enterprises (DBEs);
- Form FHWA-1273, "Required Contract Provisions," a collection of contract provisions and proposal notices that are generally applicable to *all Federal-aid construction projects* and must be made a part of, and physically incorporated into, *all federally-assisted contracts*, as well as appropriate subcontracts and purchase orders, particularly Sections II (Nondiscrimination) and III (Nonsegregated Facilities).

MINIMUM WAGES

(07-21-09) Z-5

FEDERAL: The Fair Labor Standards Act provides that with certain exceptions every employer must pay wages at the rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS ($7.25) per hour.

STATE: The North Carolina Minimum Wage Act provides that every employer shall pay to each of his employees' wages at a rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS ($7.25) per hour.

The minimum wage paid to all skilled labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS ($7.25) per hour.

The minimum wage paid to all intermediate labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS ($7.25) per hour.

The minimum wage paid to all unskilled labor on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS ($7.25) per hour.

The determination of the intent of the application of these Acts to the project's contract shall be the Design-Build Team's responsibility.

The Design-Build Team shall have no claim against the Department of Transportation for any changes in the minimum wage laws, State or Federal. It is the responsibility of the Design-Build Team to be fully informed of all Federal and State Laws affecting the project's contract.

***** STANDARD SPECIAL PROVISIONS *****

(7-9-12) EDB

DIVISION ONE OF STANDARD SPECIFICATIONS

Division One of the *2012 NCDOT Standard Specifications for Roads and Structures* (*Standard Specifications*) shall apply except as follows:

Definitions: Throughout Division One of the *Standard Specifications*, the term "Contractor" is replaced with "Design-Build Team", the term "Bidder" is replaced with "Proposer," and the term "Bid" is replaced by "Price Proposal." The replacement of "Contractor" with "Design-Build Team" does not apply to Article 102-2. The replacement of the above terms also does not apply when the terms are part of a phrase (e.g. bid bond, prime contractor, total amount bid, etc.)

Deletions: Articles 102-4 and 103-4(B) of the *Standard Specifications* are deleted from Design-Build Contracts.

Modifications: The remainder of this Standard Special Provision includes modifications to Division One of the *Standard Specifications*.

SECTION 101
DEFINITION OF TERMS

Page 1-3, Article 101-3, replace and add certain definitions as follows:

ADDITIONAL WORK

Additional work is that which results from a change or alteration to the contract and for which there are contract unit prices in the original contract or an executed supplemental agreement.

ADVERTISEMENT

The public advertisement inviting Statements of Qualifications for the design and construction of specific projects.

AWARD

The decision of the Department of Transportation to accept the proposal of the selected Design-Build Team for work which is subject to the furnishing of payment and performance bonds, and such other conditions as may be otherwise provided by law, the Request for Proposals, and the *Standard Specifications*.

CONTRACT

The executed agreement between the Department and the successful proposer, covering the performance of, and compensation for, the work. The term contract is all inclusive with reference to all written and electronic agreements affecting a contractual relationship and all documents referred to therein. The contract shall include, but not be limited to, the Request for Proposals, the Price Proposal, the printed contract form and attachments, contract bonds, plans and associated special provisions prepared by the Design-Build Team, standard specifications and supplemental specifications, standard special provisions and project special provisions contained in the Request for Proposals or as developed by the Design-Build Team and accepted

by the Department, and all executed supplemental agreements. The contract shall constitute one instrument.

All references to contracts shall include electronic agreements and printed paper agreements. These may include, but not be limited to, the electronic bid bond, Non-Collusion Affidavit, Debarment Certification, Gift Ban Certification and award limits.

The contract shall constitute one instrument.

DATE OF AVAILABILITY

That date set forth in the Request for Proposals, by which it is anticipated that the Contract will be executed and sufficient design efforts or work sites within the project limits will be available for the Design-Build Team to begin his controlling operations or design.

DESIGN-BUILD

A form of contracting in which the successful proposer undertakes responsibility for both the design and construction of a project.

DESIGN-BUILD TEAM

An individual, partnership, joint venture, corporation or other legal entity that furnishes the necessary design and construction services, whether by itself or through subcontracts.

PLANS

The project plans, Standard Drawings, working drawings and supplemental drawings, or reproductions thereof, accepted by the Engineer, which show the location, character, dimensions and details of the work to be performed. Unless otherwise noted within the Request for Proposals, the term "plans" refers to plans as developed by the Design-Build Team and accepted by the Department.

(A) Standard Drawings:

Drawings approved for repetitive use, showing details to be used where appropriate. All Standard Drawings approved by the Department plus subsequent revisions and additions. Standard Drawings are available for purchase from:

Randy A. Garris, PE
State Contract Officer
1591 Mail Service Center
Raleigh, NC 27699-1591

(B) Preliminary Plans:

Department-furnished drawings distributed in concert with a Request for Proposals, or as developed by the Design-Build Team.

(C) Project Plans:

Construction drawings prepared, sealed and completed by the Design-Build Team, or as provided by the Department, that contain specific details and dimensions peculiar to the work.

(D) Working Drawings and Supplemental Drawings:

Supplemental design sheets, shop drawings, or similar data which the Design-Build Team is required to submit to the Engineer.

(E) As-Constructed Drawings:

Red-lined mark-up of the latest Released for Construction (RFC) Plans containing the information listed under As-Constructed Plans in the Records and Reports Section of the NCDOT Construction Manual.

(F) As-Built Plans:

Coordinately correct plans documenting the details, dimensions and locations of the completed work.

PRICE PROPOSAL

The offer of a Proposer, submitted electronically, to perform the work and furnish the labor and materials at the price quoted.

PROPOSER

An individual, partnership, firm, corporation, LLC, or joint venture formally submitting a Price Proposal in response to a Request for Proposals.

RIGHT OF WAY

The land area shown on the plans as right of way within which the project is to be constructed.

SCHEDULE OF VALUES

A schedule of work items necessary to complete work, along with the progress of each work item, primarily for the purpose of partial payments.

TABLE OF QUANTITIES

A listing of work items (corresponding to the items in the Trns*port pay item list) that contributes to a project completion. The table shall include estimated quantities for each work item.

SECTION 102
PROPOSAL REQUIREMENTS AND CONDITIONS

Page 1-9, delete Article 102-1 and replace with the following:

102-1 INVITATION TO BID

After the advertisement has been made, an Invitation to Bid will be made available to known prequalified contractors and any other contracting firms, material suppliers and other interested parties who have requested they be placed on the Invitation to Bid mailing list, informing them that Statements of Qualifications and Proposals will be received for the construction of specific projects. Such invitation will indicate the contract identification number, length, locations and descriptions; a general summary of the scope of work to be performed; and information on how to receive a Request for Qualifications.

All projects will be advertised in daily newspapers throughout the state before the bid opening.

Page 1-12, delete Article 102-3 and replace with the following:

102-3 REQUEST FOR PROPOSALS

A Request for Proposals will be furnished by the Department to the selected proposers from among the respondents to the Request for Qualifications. This Request for Proposals will state the location of the project and will show a schedule of contract items for which Price Proposals are invited. It will set forth the date and time Price Proposals will be read. The Request for Proposals will also include special provisions or requirements that vary from or are not contained in any preliminary design information or standard specifications.

Standard specifications, sealed plans specifically identified as the Department's responsibility and other documents designated in the Request for Proposals shall be considered a part of the Request for Proposals whether or not they are attached thereto.

The names and identity of each prospective Proposer that receives a copy of the Request for Qualifications for the purposes of submitting a Statement of Qualifications shall be made public, except that a potential Proposer who obtains a Request for Qualifications may, at the time of ordering, request that his name remain confidential.

One copy of the Final Request for Proposals will be furnished to each prospective Proposer upon request. Additional copies may be purchased for the sum of $25 each.

The Proposer shall submit their Price Proposal electronically in accordance with Article 102-8(B).

Page 1-14, Article 102-7, 4th paragraph, delete the first two sentences and replace with the following:

The Proposer is cautioned that details shown in the subsurface investigation report are preliminary only. The subsurface investigation and subsurface report, if provided, is done so for information purposes only.

Pages 1-19, delete Article 102-12 and replace with the following:

102-12 WITHDRAWAL OR REVISION OF BIDS

A Design-Build Team may change its Price Proposal as many times as desired before the advertised priced proposal opening time specified in the Request for Proposal. The latest time stamped electronically submitted Price Proposal before the advertised price proposal opening time will constitute the Price Proposal.

Withdrawal of a bid after the date and time set for the opening of the Price Proposals will be permitted only in accordance with Article 103-3 or otherwise approved by the Chief Engineer.

Page 1-19, Article 102-13, replace "Invitation to Bid" with "Request for Proposals" in all instances.

Page 1-19, Article 102-13, add the following after Bullet (B):

(C) Has been shortlisted by the Department to bid on for this contract.

102-13 RECEIPT AND OPENING OF BIDS

Price Proposals from shortlisted Proposers will be opened and read publicly on the date and time indicated in the Request for Proposals. Proposers, their authorized agents, and other interested parties are invited to be present.

Page 1-19, Article 102-14, replace the 1st paragraph with the following:

102-14 REJECTION OF BIDS

Any Price Proposal submitted which fails to comply with any of the requirements of Articles 102-8, 102-9 or 102-10, or with the requirements of the project scope and specifications shall be considered irregular and may be rejected. A Price Proposal that does not contain costs for all proposal items shall be considered irregular and may be rejected.

Page 1-20, Subarticle 102-15(O), delete and replace with the following:

(O) Failure to restrict a former Department employee as prohibited by Article 108-5.

SECTION 103
AWARD AND EXECUTION OF CONTRACT

Page 1-25, Article 103-6, delete the 1st and 2nd paragraphs and replace with the following:

Checks that have been furnished as a bid deposit will be retained until after the contract bonds have been furnished by the successful proposer, at which time the checks that were furnished as a bid deposit will be returned.

SECTION 104
SCOPE OF WORK

Page 1-26, delete Article 104-1 and replace with the following:

104-1 INTENT OF CONTRACT

The intent of the contract is to prescribe the work or improvements that the Design-Build Team undertakes to perform, in full compliance with the contract documents. In case the method of construction or character of any part of the work is not covered by the contract, this section shall apply. The Design-Build Team shall perform all work in accordance with the contract or as may be modified by written orders, and shall do such special, additional, extra, and incidental work as may be considered necessary to complete the work to the full intent of the contract. Unless otherwise provided elsewhere in the contract, the Design-Build Team shall furnish all implements, machinery, equipment, tools, materials, supplies, transportation, and labor necessary for the design, prosecution and completion of the work.

Page 1-26, Article 104-3, replace "plans or details of construction" with "contract" in all instances within this Article.

Page 1-35, Article 104-10, replace the first paragraph with the following:

104-10 MAINTENANCE OF THE PROJECT

The Design-Build Team shall maintain each bridge site within the site's construction limits from the date of beginning construction on that site until the site is finally accepted. For sections of facilities impacted by utility construction / relocation performed by the Design-Build Team prior to beginning construction on the roadway project, maintenance of the impacted sections of facilities shall be performed by the Design-Build Team beginning concurrently with the impact. All existing and constructed guardrail / guiderail within the project limits shall be included in this maintenance. This maintenance shall be continuous and effective and shall be prosecuted with adequate equipment and forces to the end that all work covered by the contract is kept in satisfactory and acceptable conditions at all times. The Design-Build Team shall perform weekly inspections of guardrail and guiderail and shall report damages to the Engineer on the same day of the weekly inspection. Where damaged guardrail or guiderail is repaired or replaced as a result of maintaining the project in accordance with this Article, such repair or replacement shall be performed within 7 consecutive calendar days of such inspection report.

Page 1-35, Article 104-10, add the following after the last paragraph:

The Design-Build Team will not be compensated for performance of weekly inspections and damage reports for the guardrail / guiderail. Other maintenance activities for existing guardrail / guiderail will be handled in accordance with Articles 104-7 and 104-8.

SECTION 105
CONTROL OF WORK

Pages 1-40, delete Article 105-2 and replace with the following:

105-2 PLANS AND WORKING DRAWINGS

All plans shall be supplemented by such approved working drawings as are necessary to adequately control the work. Working drawings furnished by the Design-Build Team and approved by the Engineer shall consist of such detailed drawings as may be required to adequately control the work. They may include stress sheets, shop drawings, erection drawings, falsework drawings, cofferdam drawings, bending diagrams for reinforcing steel, catalog cuts, or any other supplementary drawings or similar data required of the Design-Build Team. When working drawings are approved by the Engineer, such approval shall not operate to relieve the Design-Build Team of any of his responsibility under the contract for the successful completion of the work.

Changes on shop drawings after approval and/or distribution shall be subject to the approval of the Engineer and he shall be furnished a record of such changes.

Page 1-41, Article 105-3, add the following after the 3rd paragraph:

The Design-Build Team shall bear all the costs of providing the burden of proof that the nonconforming work is reasonable and adequately addresses the design purpose. The Design-Build Team shall bear all risk for continuing with nonconforming work in question until it is accepted.

The Engineer may impose conditions for acceptance of the nonconforming work. The Design-Build Team shall bear all costs for fulfilling the conditions.

The decisions whether the product satisfies the design purpose, whether the nonconforming work is reasonably acceptable and the conditions for acceptance are at the sole discretion of the Engineer.

Pages 1-41, delete Article 105-4 and replace with the following:

105-4 COORDINATION OF PLANS, SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS

The Request for Proposals, all construction Plans, the Standard Specifications, Supplemental Specifications and Special Provisions and all supplementary documents are essential parts of the contract and a requirement occurring in one is as binding as though occurring in all. They are complementary and describe and provide the complete contract.

In case of discrepancy or conflict, the order in which they govern shall be as follows:

(A) Request for Proposals, in which Project Special Provisions govern Standard Special Provisions

(B) Accepted Plans and Details from the Design-Build Team, or sealed plans provided by the Department, as applicable

(C) Standard Drawings

(D) Standard Specifications

Where dimensions on the plans are given or can be computed from other given dimensions they shall govern over scaled dimensions.

The Design-Build Team shall take no advantage of any error or omission in the plans, estimated quantities, or specifications. In the event the Design-Build Team discovers an error or omission, he shall immediately notify the Engineer.

Page 1-43, Article 105-8, line 28, after the first sentence, add the following:

Identify excavation locations by means of pre-marking with white paint, flags, or stakes or provide a specific written description of the location in the locate request.

Page 1-44, delete Article 105-9 and replace with the following:

105-9 CONTRUCTION STAKES, LINES, AND GRADES

The Design-Build Team shall be responsible for all surveying, construction staking and layout required in the performance of the work. The Design-Build Team will be responsible for the accuracy of lines, slopes, grades and other engineering work which he provides under this contract.

Page 1-47, Article 105-17, add the following after Bullet (F):

(G) When all work is satisfactorily completed at a given bridge site, that site will be accepted.

SECTION 106
CONTROL OF MATERIAL

Page 1-49, Article 106-2, add the following after the second paragraph:

Prior to beginning construction, the Design-Build Team shall provide a Table of Quantities as described in Article 101-3 of these specifications.

The Table of Quantities Work Items shall correspond to Pay Items as defined in the Standard Specifications. These Work Items have associated Materials and Conversion Factors. For non-standard Work Items, a Generic Work Item with the correct Unit of Measure and in an appropriate category will be used. For example, “GENERIC TRAFFIC CONTROL ITEM – EA” or “GENERIC RETAINING WALL ITEM – LF”. For these Generic Work Items, Materials must be defined and appropriate conversion factors submitted.

An initial Table of Quantities shall be submitted no later than 30 calendar days after the date of award. The Table of Quantities shall be updated and resubmitted within 14 days of when a set of Plans is sealed as Release for Construction (RFC) Plans, and whenever there are substantial changes to the Quantities on previously incorporated RFC Plans.

Page 1-51, Article 106-6, add the following after the last paragraph:

For items normally pretested by the Department, the Design-Build Team shall provide a minimum of 30 days notice prior to the beginning of production of the items for this project along with final approved shop drawings.

SECTION 107
LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

Page 1-61, delete Article 107-18 and replace with the following:

107-18 FURNISHING RIGHT OF WAY

The responsibility for coordinating the securing of all necessary rights of way is as outlined in the Request for Proposals.

SECTION 108
PROSECUTION AND PROGRESS

Page 1-64. Article 108-2, replace the 2nd paragraph with the following:

The Design-Build Team shall submit a Progress Schedule for review within thirty (30) calendar days of receiving Notice of Award. The Department will review the Progress Schedule within twenty-one (21) calendar days of receipt. The Design-Build Team shall make any necessary corrections and adjustments to the Progress Schedule as necessitated by the Department's review within seven (7) calendar days. The Department will review the revised Progress Schedule within seven (7) calendar days of receipt.

Page 1-64, Subarticle 108-2(A)(1), add the following:

(k) Utility relocation and construction

Page 1-65, Subarticle 108-2(A)(2), add the following:

(h) Critical design submittal dates

(i) Critical permitting dates

(j) Completion of right of way acquisition

(k) Completion of utility relocation and construction

Page 1-65, Article 108-2, add the following:

(D) The Design-Build Team shall provide a written narrative each month detailing the work and percentage of work completed, anticipated sequence of upcoming work (2 month forecast), controlling operation(s), intermediate completion dates, and milestones. If any milestones are exceeded or will not be achieved, the Design-Build Team shall provide in the written narrative details of the delay; controlling operation affected, impacts to other operations, revisions to future intermediate completion dates and milestones, and remedial action necessary to get the project back to the original completion date.

Page 1-65, delete Article 108-3 and replace with the following:

108-3 PRECONSTRUCTION AND PRE-DESIGN CONFERENCES

The selected Design-Build Team shall meet with the Engineer for a pre-design conference concerning the design phase of the work. This conference shall be held prior to the commencement of work, as it is determined according to Article 108-1, and will be scheduled by the Engineer. At the predesign conference, the Design-Build Team shall furnish authorized signature forms and a list of any proposed subcontractors associated with the design of the project.

A preconstruction conference shall be held at least 10 working days before construction activity begins. This second conference, concerning the construction phase, shall also be scheduled by the Engineer. The Design-Build Team shall give the Engineer a minimum of 45 days notice before he plans to begin construction activities. This will allow the Engineer time for any environmental agency representatives involved in the permitting process, as well as any other pertinent entities, to be scheduled to attend the preconstruction conference. If the Design-Build Team is responsible for utilities in accordance with Article 105-8 and the Request for Proposals, he shall be responsible for coordinating with the Engineer in scheduling their attendance and for notifying them. The Design-Build Team shall also be responsible for coordinating with the Engineer in scheduling the attendance of subcontractors and others deemed appropriate, and for notifying them.

At the preconstruction conference, a list of any proposed subcontractors and major material suppliers associated with the construction of the project will be submitted.

If the contract has a DBE requirement, the Design-Build Team shall submit copies of completed and signed DBE subcontracts, purchase orders, or invoices to the Department.

The Design-Build Team shall submit a traffic control plan in accordance with Article 1101-5 and the Request for Proposals. The Design-Build Team shall designate an employee who is competent and experienced in traffic control to implement and monitor the traffic control plan. The qualifications of the designated employee must be satisfactory to the Engineer.

The Design-Build Team shall submit a safety plan and designate an employee as Safety Supervisor.

Both plans shall be submitted at the preconstruction conference and must be satisfactory to the Engineer. Should the design plan include activities that would place personnel on the work site, traffic control and safety plans for those activities shall be submitted at the predesign conference.

During the preconstruction conference, the Engineer will designate a Department employee or employees who will be responsible to see that the traffic control plans and any alterations thereto are implemented and monitored to the end that traffic is carried through the work in an effective manner. If approved by the Engineer, the Design-Build Team may designate one employee to be responsible for both the traffic control and safety plans. The Design-Build Team shall not designate its superintendent as the responsible person for either the traffic control plan or the safety plan, unless approved by the Engineer.

If the project requires that Design-Build Team or State personnel work from falsework, within shoring, or in any other hazardous area the Design-Build Team shall submit, as part of the Design-Build Team's safety plan, specific measures it will use to ensure worker safety.

The Design-Build Team shall also submit a program for erosion control and pollution prevention on all projects involving clearing and grubbing, earthwork, structural work, or other construction, when such work is likely to create erosion or pollution problems.

If the Design-Build Team fails to provide the required submissions, the Engineer may order the preconstruction conference suspended until such time as they are furnished. Work shall not begin until the preconstruction conference has been concluded and the safety plan has been approved, unless authorized by the Engineer. The Design-Build Team shall not be entitled to additional compensation or an extension of contract time resulting from any delays due to such a suspension.

The Design-Build Team shall designate a qualified employee as Quality Control Manager. The Quality Control Manager shall be responsible for implementing and monitoring the quality control requirements of the project.

Page 1-65, Article 108-4, add the following sentence to the end of this article:

The Design-Build Team shall record the proceedings of these conferences and distribute the final minutes of the conferences to all attendees.

Page 1-65, Article 108-5, delete the first sentence of the second paragraph and delete the first word of the second sentence of the second paragraph.

Page 1-66, Article 108-6, replace “40%” with “30%” in the 1st paragraph.

Page 1-66, Article 108-6, replace “35%” with “25%” in the 2nd paragraph.

Pages 1-68, delete Article 108-8 and replace with the following:

108-8 FAILURE TO MAINTAIN SATISFACTORY PROGRESS

The Engineer will check the Design-Build Team’s progress at the time each partial pay request is received. The Design-Build Team’s progress may be considered as unsatisfactory if, according to the Progress schedule, the projected finish date for all work exceeds the scheduled finish date by more than 10%.

When the Design-Build Team's progress is found to be unsatisfactory as described above, the Engineer may make written demand of the Design-Build Team to state in writing the reason for the unsatisfactory progress and produce such supporting data as the Engineer may require or the Design-Build Team may desire to submit. The Engineer will consider the justifications submitted by the Design-Build Team and extensions of the completion date that have or may be allowed in accordance with Article 108-10(B) and as modified herein.

When the Design-Build Team cannot satisfactorily justify the unsatisfactory progress the Engineer may invoke one or more of the following sanctions:

1. Withhold anticipated liquidated damages from amounts currently due or which become due.

2. Remove the Design-Build Team and individual managing firms of the Design-Build Team and/or prequalified design firms from the Department's Prequalified Bidders List.

When any of the above sanctions have been invoked, they shall remain in effect until rescinded by the Engineer.

Page 1-71, Article 108-10(B), add the following as the first paragraph:

Only delays to activities which affect the completion date or intermediate contract date will be considered for an extension of contract time. No extensions will be granted until a delay occurs which impacts the project's critical path and extends the work beyond the contract completion date or intermediate completion date. Any extension to the completion date or intermediate contract date will be based on the number of calendar days the completion date or intermediate completion date is impacted as determined by the Engineer's analysis.

Pages 1-71, delete Subarticle 108-10(B)(1) in its entirety.

Page 1-75, Article 108-13, delete bullet (E)(2) in its entirety.

SECTION 109
MEASUREMENT AND PAYMENT

Page 1-76, Article 109-2, delete the last sentence of the 1st paragraph and replace with the following:

Payment to the Design-Build Team will be made only for the work completed, certified and accepted in accordance with the terms of the contract.

Pages 1-81, delete Article 109-4(A) and replace with the following:

109-4 PARTIAL PAYMENTS

(A) **General:**

Partial payments will be based upon progress estimates prepared by the Engineer at least once each month on the date established by the Engineer. Partial payments may be made twice each month if in the judgment of the Engineer the amount of work performed is sufficient to warrant such payment. No partial payment will be made when the total value of work performed since the last partial payment amounts to less than $10,000.00. Partial payments will be approximate only and will be subject to correction in the final estimate and payment.

When the contract includes one lump sum price for the entire work required by the contract, partial payments for the lump sum design-build price shall be based on a certified Schedule of Values submitted by the successful Design-Build Team and approved by the Engineer. The certification shall indicate the Design-Build Team has reviewed the information submitted and the information accurately represents the work performed for which payment is requested. The certified Schedule of Values shall be submitted no later than 30 calendar days after the date of award. Each item on the

certified Schedule of Values shall be assigned a cost and quantity and shall be identified as an activity on the progress schedule. A revised certified Schedule of Values shall be submitted with each update of the Progress schedule as described in Article 108-2, and as modified herein, or when requested by the Engineer. A certified copy of the Table of Quantities shall also be submitted with each payment request. The certification of the Table of Quantities shall indicate the Design-Build Team has reviewed the information submitted and the information accurately represents the materials for the work performed for which payment is requested.

When the contract includes lump sum items for portions of the work required by the contract, and the applicable section of the Specifications or Request for Proposals specify the means by which the total amount bid be included in the partial pay estimates, the Engineer will determine amounts due on the partial pay estimate in accordance with the applicable portion of the Specifications or Request for Proposals.

The Engineer will withhold an amount sufficient to cover anticipated liquidated damages as determined by the Engineer.

Page 1-82, Subarticle 109-5(D), delete the 4th and 5th paragraphs and replace with the following:

Partial payments will not be made on seed or any living or perishable plant materials.

Partial payment requests shall not be submitted by the Design-Build Team until those items requested have corresponding signed and sealed RFC plans accepted by the Department.

Pages 1-84, Article 109-10, add the following as bullets (E) and (F) under the 1st paragraph.

(E) As-Constructed Drawings, As-Built Plans and other documents required elsewhere in this RFP.

(F) Documents or guarantees to support any warranty provided by the Design Build Team.

County : Robeson

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
			ROADWAY ITEMS			
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000900000-N	SP	GENERIC MISCELLANEOUS ITEM DESIGN & CONSTRUCTION OF BRIDGES	Lump Sum	L.S.	
0003	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM END BENTS STRUCTURE #770413	2 EA		
0004	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM RIGHT OF WAY ACQUISITION	12 EA		
0005	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #1 STRUCTURE #770413	70 LF		
0006	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #2 STRUCTURE #770413	70 LF		
0007	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM BRIDGE LENGTH STRUCTURE #770413	55 LF		
			******* BEGIN SCHEDULE AA ******* ******* (2 ALTERNATES) *******			
0008 AA1	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM END BENTS STRUCTURE #770026	2 EA		
0009 AA1	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM INTERIOR BENT CAPS STRUCTURE #770026	1 EA		
0010 AA1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #1 STRUCTURE #770026	85 LF		
0011 AA1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #2 STRUCTURE #770226	85 LF		
0012 AA1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT INTE- BENT #1 STRUCTURE #770026	90 LF		
0013 AA1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM BRIDGE LENGTH STRUCTURE #770026	125 LF		
			*** OR ***			

County : Robeson

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0014 AA2	0000900000-N	SP	GENERIC MISCELLANEOUS ITEM ALTERNATE LUMP SUM BID FOR BRIDGE #770026	Lump Sum	L.S.	
			***** END SCHEDULE AA *****			
			******* BEGIN SCHEDULE AB ******* ******* (2 ALTERNATES) *******			
0015 AB1	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM END BENTS STRUCTURE #770223	2 EA		
0016 AB1	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM INTERIOR BENT CAPS STRUCTURE #770223	1 EA		
0017 AB1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #1 STRUCTURE #770223	80 LF		
0018 AB1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #2 STRUCTURE #770223	80 LF		
0019 AB1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT INTE- BENT #1 STRUCTURE #770223	85 LF		
0020 AB1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM BRIDGE LENGTH STRUCTURE #770223	85 LF		
			*** OR ***			
0021 AB2	0000900000-N	SP	GENERIC MISCELLANEOUS ITEM ALTERNATE LUMP SUM BID FOR BRIDGE #770223	Lump Sum	L.S.	
			***** END SCHEDULE AB *****			
			******* BEGIN SCHEDULE AC ******* ******* (2 ALTERNATES) *******			
0022 AC1	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM END BENTS STRUCTURE #770414	2 EA		
0023 AC1	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM INTERIOR BENT CAPS STRUCTURE #770414	1 EA		
0024 AC1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #1 STRUCTURE #770414	80 LF		

County : Robeson

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0025 AC1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #2 STRUCTURE #770414	80 LF		
0026 AC1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT INTE- BENT #1 STRUCTURE #770414	85 LF		
0027 AC1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM BRIDGE LENGTH STRUCTURE #770414	85 LF		
			*** OR ***			
0028 AC2	0000900000-N	SP	GENERIC MISCELLANEOUS ITEM ALTERNATE LUMP SUM BID FOR BRIDGE #770414	Lump Sum	L.S.	
			***** END SCHEDULE AC *****			
			******* BEGIN SCHEDULE AD ******* ******* (2 ALTERNATES) *******			
0029 AD1	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM END BENTS STRUCTURE #770432	2 EA		
0030 AD1	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM INTERIOR BENT CAPS STRUCTURE #770432	1 EA		
0031 AD1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #1 STRUCTURE #770432	80 LF		
0032 AD1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #2 STRUCTURE #770432	80 LF		
0033 AD1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT INTE- BENT #1 STRUCTURE #770432	85 LF		
0034 AD1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM BRIDGE LENGTH STRUCTURE #770432	85 LF		
			*** OR ***			
0035 AD2	0000900000-N	SP	GENERIC MISCELLANEOUS ITEM ALTERNATE LUMP SUM BID FOR BRIDGE #770432	Lump Sum	L.S.	
			***** END SCHEDULE AD *****			

County : Robeson

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
			******* BEGIN SCHEDULE AE ******* ******* (2 ALTERNATES) *******			
0036 AE1	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM END BENTS STRUCTURE #770433	2 EA		
0037 AE1	0000915000-N	SP	GENERIC MISCELLANEOUS ITEM INTERIOR BENT CAPS STRUCTURE #770433	2 EA		
0038 AE1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #1 STRUCTURE #770433	70 LF		
0039 AE1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT END BENT #2 STRUCTURE #770433	70 LF		
0040 AE1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT INTE- BENT #1 STRUCTURE #770433	75 LF		
0041 AE1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM AVE FOUNDATION LENGTH AT INTE- BENT #2 STRUCTURE #770433	75 LF		
0042 AE1	0000930000-E	SP	GENERIC MISCELLANEOUS ITEM BRIDGE LENGTH STRUCTURE #770433	90 LF		
			*** OR ***			
0043 AE2	0000900000-N	SP	GENERIC MISCELLANEOUS ITEM ALTERNATE LUMP SUM BID FOR BRIDGE #770433	Lump Sum	L.S.	
			***** END SCHEDULE AE *****			