Transportation

PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

April 1, 2016

Addendum No. 1

Contract No.:	C203759
TIP No.:	U-2519CA / B-5516
County:	Cumberland
Project Description:	Future I-295 - Fayetteville Outer Loop from south of US 401 to south of SR 1400 (Cliffdale Road); and Replacement of Bridge No. 14 on SR 3569 (Raeford Road) over Bones Creek (Lake Rim Runoff)

RE: Addendum No. 1 to Final RFP

June 21, 2016 Letting

To Whom It May Concern:

Reference is made to the Final Request for Proposals dated March 10, 2016 recently furnished to you on the above project. We have since incorporated changes, and have attached a copy of Addendum No. 1 for your information. Please note that all revisions have been highlighted in gray and are as follows:

On the COVER SHEET, change the date for the Technical and Price Proposal submission to May 26, 2016; and change the date and time for the Price Proposal Opening to June 21, 2016. Please mark through the dates shown on the March 10, 2016 (Labeled) RFP and insert the new dates. These corrections must be done in ink and initialed and dated by your Team's primary contractor (reference the attached example). The corrected Final RFP, must be used to submit the Price Proposal for return to this office.

The first and second pages of the *Table of Contents* have been revised. Please void the first and second pages in your proposal and staple the revised first and second pages thereto.

Page No. 1 of the *Contract Time and Liquidated Damages Project Special Provision* has been revised. Please void Page No. 1 in your proposal and staple the revised Page No. 1 thereto.

Page No. 4 of the *Submittal of Quantities, Fuel Base Index Price and Opt-Out Option Project Special Provision* has been revised. Please void Page No. 4 in your proposal and staple the revised Page No. 4 thereto.

Page No. 11 of the *Schedule of Estimated Completion Progress Project Special Provision* has been revised. Please void Page No. 11 in your proposal and staple the revised Page No. 11 thereto.

Page Nos. 46 and 47 of the *Price Adjustments for Asphalt Binder Project Special Provision* have been revised. Please void Page Nos. 46 and 47 in your proposal and staple the revised Page Nos. 46 and 47 thereto.

Page No. 75A has been added to add the *Iran Divestment Act Project Special Provision* and the *Cargo Preference Act Project Special Provision*. Please add Page No. 75A to you proposal.

Page Nos. 77 and 82 of the *General Section* have been revised. Please void Page Nos. 77 and 82 in your proposal and staple the revised Page Nos. 77 and 82 thereto.

Page Nos. 102 and 104 of the *Roadway Scope of Work* have been revised. Please void Page Nos. 102 and 104 in your proposal and staple the revised Page Nos. 102 and 104 thereto.

Page Nos. 126, 128 and 132 of the *Geotechnical Engineering Scope of Work* have been revised. Please void Page Nos. 126, 128 and 132 in your proposal and staple the revised Page Nos. 126, 128 and 132 thereto.

Page No. 147 of the *Transportation Management Scope of Work* has been revised. Please void Page No. 147 in your proposal and staple the revised Page No. 147 thereto.

Page No. 182 of the *Erosion and Sedimentation Control Scope of Work* has been revised. Please void Page No. 182 in your proposal and staple the revised Page No. 182 thereto.

Page No. 186 of the *Utilities Coordination Scope of Work* has been revised. Please void Page No. 186 in your proposal and staple the revised Page No. 186 thereto.

As a reminder, each Team is required to participate in a 30-minute presentation, followed by an oral interview with the Department's Technical Review Committee. The presentations and oral interviews will be held on June 16, 2016 in the Riverwood Conference Room (Century Center Building "B") at the times noted below. A maximum of ten (10) people from the Design-Build Team may attend.

Company	**Time**
Barnhill Contracting Company	8:30 a.m.
Flatiron Constructors, Inc. / Blythe Development Company - Joint Venture	10:30 a.m.
Zachry Construction Corporation	1:00 p.m.

If you have any questions or need additional information, I can be reached by telephone at (919) 707-6900.

Sincerely,

DocuSigned by:
A7079FC32A09478...
R.A. Garris, PE
Contract Officer

RAG/kbc

cc: Rodger Rochelle, PE
Greg Burns, PE
Teresa Bruton, PE
Ron McCollum, PE
Karen Capps, PE
File

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

FINAL REQUEST FOR PROPOSALS

DESIGN-BUILD PROJECT

TIP U-2519CA / B-5516

March 10, 2016

VOID FOR BIDDING

ABC, Date

May 26, 2016

DATE AND TIME OF TECHNICAL AND PRICE PROPOSAL SUBMISSION: ~~**April 26, 2016**~~ BY **4:00 PM**

DATE AND TIME OF PRICE PROPOSAL OPENING: ~~**May 17, 2016 AT**~~ **2:00 PM**

June 21, 2016

ABC, Date

CONTRACT ID: C 203759

WBS ELEMENT NO. 34817.3.GVS6

FEDERAL-AID NO. NHP-0620(31)

NOTE: Revised dates, initials, and date initialed are to be handwritten in ink.

COUNTY: Cumberland

ROUTE NO. Future I-295

MILES: 3.1

LOCATION: Future I-295 - Fayetteville Outer Loop from south of US 401 to south of SR 1400 (Cliffdale Road); and Replacement of Bridge No. 14 on SR 3569 (Raeford Road) over Bones Creek (Lake Rim Runoff)

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

_____

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COVER SHEET

PROPOSAL SHEETS

PROJECT SPECIAL PROVISIONS *PAGE NO.*

*** PROJECT SPECIAL PROVISIONS ***

CONTRACT TIME AND LIQUIDATED DAMAGES

07/12/07 DB1 G04A

The date of availability for this contract is August 1, 2016, except that the Design-Build Team shall only begin ground disturbing activities as allowed by this Request for Proposals (RFP). The Design-Build Team shall consider this factor in determining the proposed completion date for this project.

The completion date for this contract is defined as the date proposed in the Technical Proposal by the proposer who is awarded the project. The completion date thus proposed shall not be later than May 1, 2021.

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 proposed by the Design-Build Team in the Technical Proposal, the performance and payment bonds shall remain in full force and effect until the observation period has been completed and the work accepted by the Department.

The liquidated damages for this contract are **Four Thousand Dollars ($4,000.00)** per calendar day. As an exception to this amount, where the contract has been determined to be substantially complete as defined by the *Substantial Completion* Project Special Provision found elsewhere in this RFP, the liquidated damages will be reduced to **One Thousand Dollars ($1,000.00)** per calendar day.

Where the Design-Build Team who is awarded the contract has proposed a completion date for the contract as required above, but also has proposed an earlier date for substantial completion, then both of these proposed dates will become contract requirements.

Liquidated damages of **Four Thousand Dollars ($4,000.00)** per calendar day will be applicable to the early date for substantial completion proposed by the bidder. Liquidated damages of **One Thousand Dollars ($1,000.00)** per calendar day will be applicable to the Final Completion Date proposed by the bidder where the Design-Build Team has proposed an earlier date for substantial completion.

OTHER LIQUIDATED DAMAGES AND INCENTIVES

(3/22/07) (Rev. 02/14/08) DB1 G11

Reference the Transportation Management Scope of Work found elsewhere in this RFP for more information on the following time restrictions and liquidated damages:

> Liquidated Damages for Intermediate Contract Time #1 for the lane narrowing, lane closure and holiday time restrictions for Future I-295 are $1,250.00 per 15-minute period or any portion thereof.

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 and Estimate of Quantities* sheet will be subject to fuel price adjustments.

Submittal The submittal shall be signed and dated by an officer of the Design-Build Team. The information shall be copied and submitted in a separate sealed package with the outer wrapping clearly marked "Fuel Price Adjustment" and shall be delivered at the same time and location as the Technical and Price Proposal. The original shall be submitted in the Price Proposal.

Trade Secret Information submitted on the *Fuel Usage Factor Chart and Estimate of Quantities* sheet will be considered "Trade Secret" in accordance with the requirements of G.S. 66-152(3) until such time as the Price Proposal is opened.

(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 **$1.2917** 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* sheet 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 Price Proposal and the copy of the *Fuel Usage Factor Chart and Estimate of Quantities* sheet are submitted.

(E) **Failure to Submit**

Failure to submit the completed *Fuel Usage Factor Chart and Estimate of Quantities* sheet separately and in the Price Proposal will result in the Technical and Price Proposal being considered irregular by the Department and the Technical and Price Proposal may be rejected.

Preliminary ATCs

At the Design-Build Team's option, a Preliminary ATC submittal may be made that presents a concept and a brief narrative of the benefits of said concept. The purpose of allowing such a Preliminary ATC is to limit the Design-Build Team's expense in the pursuit of a Formal ATC that may be quickly denied by the Department.

To the greatest extent possible, the Department will review Preliminary ATCs within ten business days of submittal and provide written comments that include one of the responses noted below. The Department's response to a Preliminary ATC submittal will be either (1) that the Preliminary ATC is denied; (2) that the Preliminary ATC would be considered as a Formal ATC if the Team so elects to pursue a Formal ATC submission; (3) that an ATC is not required; (4) a documented question has been received outside of the ATC process on the same topic and the RFP will be revised to address that question; (5) more than one ATC has been received on the same topic and the Department has elected to exercise its right to revise the RFP; or (6) that the ATC takes advantage of an error or omission in the RFP or other documents incorporated into the contract by reference, in which case the ATC will not be considered and the RFP will be revised to correct the error or omission. The Department in no way warrants that a favorable response to a Preliminary ATC submittal will translate into a favorable response to a Formal ATC submittal. Likewise, a favorable response to a Preliminary ATC submittal is not sufficient to include the ATC in a Technical Proposal.

SCHEDULE OF ESTIMATED COMPLETION PROGRESS
(9-1-11) (Rev. 8/3/15) 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)	13% of Total Amount Bid
2018 (07/01/17 – 06/30/18)	31% of Total Amount Bid
2019 (07/01/18 – 06/30/19)	28% of Total Amount Bid
2020 (07/01/19 – 06/30/20)	19% of Total Amount Bid
2021 (07/01/20 – 06/30/21)	9% 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.

purpose of handling and placement. Submit details of handling devices or holes for approval and do not cast any concrete until approval is granted. Remove all handling devices flush with concrete surfaces as directed. Fill holes in a neat and workmanlike manner with an approved non-metallic non-shrink grout, concrete or plug.

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, Corrugated Polyethylene Pipe (HDPE Pipe) or Polyvinyl-Chloride Pipe (PVC Pipe) in accordance with the following requirements:

- All pipe types shall be subject to the maximum and minimum fill height requirements as found on Roadway Standard Drawing No. 300.01 - Sheet 3 of 3. The appropriate Reinforced Concrete Pipe class and the appropriate gage thickness for Corrugated Aluminum Alloy Pipe shall be selected based on fill height.

- Site specific conditions may limit a particular material beyond what is identified in this Project 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, Corrugated Polyethylene Pipe (HDPE Pipe) or Polyvinyl-Chloride Pipe (PVC Pipe).

- Transverse median drains, storm drainage system pipes, and open-ended cross drains shall be Reinforced Concrete Pipe unless the pipe slope is greater than 10%, in which case the pipe shall be Corrugated Aluminum Alloy 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 $**337.14** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on April 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.

FIELD OFFICE

(6-1-07) (Rev. 8-3-15) DB 08-01

Description

This work consists of furnishing, erecting, equipping, and maintaining a field office for the exclusive use of Department Engineers and Inspectors at a location on the project approved by the Engineer. Provide a field office that complies with the current A.D.A. Design and Accessibility Standards, the National Electric Code, local, state, and federal regulations, and the following:

Procedures

The field office and equipment shall remain the property of the Design-Build Team upon completion of the contract. The field office must be separated from buildings and trailers used by the Design-Build Team and shall be erected and functional as an initial operation. Failure to have the field office functional when work first begins on the project will result in withholding payment of the Design-Build Team's monthly progress estimate. The field office must be operational throughout the duration of the project and be removed upon completion and final acceptance of the project.

Provide a field office that is weatherproof, tightly floored and roofed, constructed with an air space above the ceiling for ventilation, supported above the ground, has a width of at least ten feet, and the floor-to-ceiling height that is at least 7 feet 6 inches. Provide inside walls and a ceiling that are constructed of plywood, fiber board, gypsum board, or other suitable materials. Have the exterior walls, ceiling, and floor insulated.

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 on the website noted below:

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

By submitting the Price Proposal, the Prime Contractor certifies that, as of the date of this bid, it is not on the then-current List created by the State Treasurer. The Prime 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 Prime 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 Prime 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.

CARGO PREFERENCE ACT
(2-16-16)

Privately owned United States-flag commercial vessels transporting cargoes shall be subject to the Cargo Preference Act (CPA) of 1954 requirements and regulations found in 46 CFR 381.7. Contractors are directed to clause (b) of 46 CFR 381.7 as follows:

(b) Contractor and Subcontractor Clauses. "Use of United States-flag vessels: The contractor agrees-

> "(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.
>
> (2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Engineer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.
>
> (3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract."

Guidelines, which by reference are incorporated and made a part of this contract. 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 NCDOT preliminary designs, Technical Proposal and / or 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 acceptance of the design submittals.

OVERVIEW

The Design-Build Project U-2519CA / B-5516 1) extends the Future I-295 – Fayetteville Outer Loop from south of US 401 to south of SR 1400 (Cliffdale Road), a distance of approximately 3.1 miles, and 2) replaces Bridge No. 14 on SR 3569 (Raeford Road) over Bones Creek (Lake Rim Runoff) in Cumberland County. The proposed improvements provide a control of access four-lane divided facility on new location.

Project services shall include, but are not limited to:

- **Design Services** – completion of construction plans, including Record Drawings
- **Construction Services** – necessary to build and ensure workmanship of the designed facility
- **Permit Preparation / Application** - development of all documents for required permits
- **Right of Way** – acquisition of right of way necessary to construct project
- **As-Constructed Drawings**
- **As-Built Plans**

  - ✓ The U-2519 and X-0002 Draft Environmental Impact Statement (DEIS) was approved on March 17, 1999.
  - ✓ The U-2519 and X-0002 Reevaluation of the Draft Environmental Impact Statement (DEIS) was approved on February 3, 2005.
  - ✓ The U-2519 and X-0002 Condensed Final Environmental Impact Statement (FEIS) was approved on August 17, 2005.
  - ✓ The U-2519 and X-0002 Record of Decision (ROD) was issued on January 19, 2006.
  - ✓ The B-5516 Programmatic Categorical Exclusion was approved on March 14, 2016.

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

GENERAL

Technical and Price Proposals will be accepted until **4:00 p.m. Local Time on Thursday, May 26, 2016**, at the office of the State Contract Officer:

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

No Proposals will be accepted after the time specified.

Proposals shall be submitted in two separate, sealed parcels containing the Technical Proposal in one and the Price Proposal in the other parcel.

TECHNICAL PROPOSAL - Hard Copies

Hard copies of the Technical Proposal shall be submitted in a sealed package. The outer wrapping shall clearly indicate the following information:

Technical Proposal – Hard Copies
Submitted By: (Design-Build Team's Name)
Design-Build Team Address
Contract Number C203759
TIP Number U-2519CA / B-5516
Cumberland County
Future I-295 - Fayetteville Outer Loop from south of US 401 to south of SR 1400 (Cliffdale Road); and Replacement of Bridge No. 14 on SR 3569 (Raeford Road) over Bones Creek (Lake Rim Runoff)

If delivered by mail, the sealed envelope shall be placed in another sealed envelope and the outer envelope addressed to the Contract Officer as stated in the Request for Proposals. The outer envelope shall also bear the statement "Technical Proposal for the Design-Build of State Highway Contract No. C203759".

Technical Proposal Requirements

12 Copies
8 ½ inch by 11 inch pages
No fold-out sheets allowed
Printed on one side only
Double-spaced
Font size 12
Minimal font size 10 is permissible within embedded tables, charts, or graphics. No more than 50 pages, excluding the introductory letter to Mr. Randy Garris, P.E. (two-page maximum length) and the 11 inch by 17 inch appropriate plan sheets -
24 x 36 inch fold out sheets will only be allowed to present interchange plans

- After the Department has reviewed and accepted the Design-Build Team's design submittals, the Design-Build Team shall inform the Design-Build Unit, in writing, of any changes to previously reviewed submittals.

- Design exceptions will not be allowed for the -L- Line, including all ramps and loops. NCDOT prefers not to have design exceptions for the -Y- Lines and service roads. If the Design-Build Team anticipates any design exceptions, they shall be clearly noted in the Technical Proposal. Prior to requesting / incorporating a design exception into the Final Plans, the Design-Build Team must obtain prior conceptual approval from the Design-Build Unit. If conceptual approval is obtained, the Design-Build Team shall be responsible for the development and approval of all design exceptions.

- For all parcels, the Design-Build Team shall locate and install iron pins and metal caps with fiberglass markers that delineate all proposed right of way and permanent easements within the project limits. The Design-Build Team shall replace all existing right of way and permanent easement markers / monuments damaged and / or relocated during construction. In accordance with NCDOT Policy, the Department will furnish the metal caps with fiberglass markers.

- The Design-Build Team shall design and construct the sound barrier wall listed in the May 29, 2015 U-2519CA Design Noise Report Addendum and perform any additional geotechnical investigations necessary to design the foundations. The Design-Build Team shall be responsible for the wall envelope details. If the Design-Build Team revises the horizontal and / or vertical alignments such that greater noise impacts are possible on surrounding receptors, the Design-Build Team shall re-analyze and complete a revised noise report that adheres to current NCDOT guidelines / policies, if necessary, for NCDOT and FHWA review and acceptance. The aforementioned U-2519CA Design Noise Report Addendum was based on the U-2519CA 65% Preliminary Roadway Plans that were developed on a coordinate system that is inconsistent with the required project coordinate system, and has been provided to the Design-Build Team to assist in their determination of anticipated additional noise impact on current receptors due to design changes. If adjustments to, or addition of, sound barrier walls are required as a result of design deviations, the Design-Build Team shall be responsible for all costs associated with the adjustments and / or additions.

General

Unless allowed otherwise elsewhere in this RFP, the design shall be in accordance with the 2011 AASHTO *A Policy on Geometric Design of Highways and Streets* and 2013 Errata, 2002 NCDOT *Roadway Design Manual*, including all revisions effective on the Technical Proposal submittal date, January 2012 NCDOT *Roadway Standard Drawings*, or as superseded by detail sheets located at **https://connect.ncdot.gov/resources/Specifications/Pages/2012-Roadway-Drawings.aspx**, *Roadway Design Policy and Procedure Manual*, *Roadway Design Guidelines for Design-Build Projects*, 2012 NCDOT *Standard Specifications for Roads and Structures* and the 2011 AASHTO *Roadside Design Guide,* 4th Edition and 2015 Errata.

- The Design-Build Team shall be responsible for the evaluation of the algebraic difference in rates of cross slope (roll-over) between existing shoulders and roadways and the associated suitability for carrying traffic during construction, if necessary. In the event that the roll-over is found to be unacceptable for the proposed temporary traffic patterns, the Design-Build Team shall be responsible for providing cross slopes that meet design standards and eliminate roll-over concerns.

- The Design-Build Team shall submit Structure Recommendations and Design Criteria for NCDOT review and acceptance prior to the Preliminary Roadway Plans submittal. The Design-Build Team shall develop Structure Recommendations that adhere to the format noted in the March 25, 2003 and September 1, 2004 memos from Mr. Jay Bennett, PE, former State Roadway Design Engineer.

- Unless noted otherwise elsewhere in this RFP, the design speed for all roadways shall be the greater of the minimum design speed for the facility type, as specified in the 2011 AASHTO *A Policy on Geometric Design of Highways and Streets*, or the anticipated / actual posted speed plus five mph. If a speed limit is not physically posted on an existing facility, General Statues mandate the speed limit as 55 mph, resulting in a 60 mph design speed.

- The Design-Build Team shall design and construct single face concrete barrier in front of the traffic face of all sound barrier walls, retaining walls and all elements acting as a retaining wall that are located within the vehicle recovery area. The aforementioned concrete barrier shall be located beyond the typical section shoulder point, requiring the Design-Build Team to widen the outside shoulder beyond the typical section width.

- At all -Y- Line / -Y- Line intersection radius points, including service roads, the minimum lane width for the secondary road shall be 15 feet.

- At all intersections impacted by the Design-Build Team's design and / or construction methods, excluding resurfacing, the following design vehicles shall be required for all turning movements:

  - WB-67 at all ramp / loop intersections with -Y- Lines (For side-by-side turning maneuvers, WB-67 for outside movement only and SU-30 for inside movement)

  - WB-62 at all other intersections (For side-by-side turning maneuvers, WB-62 for the outside movement only and SU-30 for inside movement)

- Unless noted otherwise elsewhere in this RFP, all roundabouts shall adhere to the design and operation parameters as detailed in NCHRP Report 672: *Roundabouts: An Informational Guide* - Second Edition. Prior to incorporation, the Design-Build Team shall provide a traffic analysis of the proposed roundabout(s), utilizing the appropriate traffic volumes and SIDRA Intersection 5.1 or SIDRA Intersection 6.0 analysis software, for NCDOT review and acceptance. All roundabouts shall be designed and constructed to accommodate a WB-67. The Department prefers that all roadway grades approaching a roundabout are 4.0% or less.

justification is acceptable to the Department. Any deviations to the requirements noted above shall require acceptance from the NCDOT Geotechnical Engineering Unit prior to the foundation design submittal.

The maximum spacing between borings for retaining walls and sound barrier walls shall be 50 feet, with a minimum of two borings; one at each end of the wall. Drill borings for retaining walls a minimum depth below the bottom of the wall equal to twice the maximum wall height. Boring depths for sound barrier walls shall be equal to the maximum wall height or to SPT refusal.

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

Unless otherwise noted herein, the Design-Build Team shall design foundations (except for sign foundations), embankments, slopes, retaining walls and sound barrier walls in accordance with the current edition of the AASHTO *LRFD Bridge Design Specifications*, NCDOT *LRFD Driven Pile Foundation Design Policy*, all applicable NCDOT Geotechnical Engineering Unit Standard Provisions, NCDOT *Structures Management Unit 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

Key in spread footings of structures crossing streams a minimum of full depth below the 100-year design scour elevation and provide scour protection in accordance with scour protection detail in the NCDOT *Structures Management Unit Manual*.

At Bridge No. 14 on SR 3569 (Raeford Road) over Bones Creek (Lake Rim Runoff), provide bridge foundation elements consisting of micropiles or drilled piers. Impact or vibratory installation of foundation elements or temporary casings shall not be allowed. Permanent steel casings shall be required for micropiles and drilled piers to a minimum of five feet below natural ground. Existing embankments and / or man-made fills shall not be considered natural ground. If micropile foundations are selected, design, construct and load test micropile foundations in accordance with the *Micropiles* Standard Special Provision found elsewhere in this RFP and the requirements noted below:

slopes in accordance with FHWA *Design and Construction of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes* – Volume I and Volume II, FHWA-NHI-10-024 and FHWA-NHI-10-025. Submit detailed design calculations and slope stability analysis for all reinforced slopes and any non- reinforced slopes higher than ten feet for review and acceptance by the Geotechnical Engineering Unit prior to construction. Provide design and construction recommendations as needed to provide roadway slopes that meet the required global factor of safety. Provide design and construction recommendations for all cut slopes that will intersect groundwater. During construction, appropriate erosion control measures shall be used to prevent long term maintenance issues on cut slopes. Provide subsurface drainage details for all cut slopes and grade points that will intersect groundwater. All ditches that intersect the water table, or are below cut slopes requiring Class B limestone rip rap plating, shall be lined with Class B limestone rip rap for their entire length. (Reference the Erosion and Sedimentation Control Scope of Work found elsewhere in this RFP)

The Design-Build Team shall provide drainage recommendations that maintain a minimum five-foot vertical separation between the groundwater table and the bottom of the mainline pavement subgrade. At a minimum, subsurface drainage shall be constructed in accordance with Roadway Standard Drawing No. 815.02. All subdrain Select Material (Class V) shall consist exclusively of limestone materials.

All subsurface and / or slope drainage that is designed for either subgrade or slope stability shall be installed regardless of site conditions at the time of construction.

Where the organic content exceeds 10%, by weight, within the construction limits of new embankments and existing embankments to be raised, the Design-Build Team shall undercut all organic soils to at least the slope stake line(s).

Bridge approach embankments shall be defined as embankments within 250 feet of end bents. Design and construct bridge approach embankments such that no more than one (1) inch of settlement shall occur after the waiting period or monitoring ends or embankment fill is constructed to subgrade elevation.

Bridge approach embankment settlement monitoring shall be required when a waiting period of more than one month is recommended or more than four (4) inches of settlement is calculated in the foundation design recommendation reports developed by the Design-Build Team. When bridge approach embankment monitoring is required, construct the embankment and approach fill to the proposed roadway grade prior to monitoring. In the absence of embankment settlement monitoring, monitor approach fill settlement after the construction of the approach fill and prior to construction of the approach slab when the approach fill height exceeds 25% of total fill height. Approach fill height shall be defined as difference between proposed grade and bottom of cap elevations. Use an appropriate method to monitor settlement across the width of the embankment (from toe to toe) such as settlement gauges, surveyed stakes on finished subgrade or other methods but submit documentation describing the method and procedures to the NCDOT Geotechnical Engineering Unit, via the Design-Build Unit, for review and acceptance prior to construction of the embankment. Bridge approach embankment waiting periods shall not be ended until less than one (1) inch of the anticipated settlement remains and less than 0.10 inch of settlement is measured over a period of four weeks. Do not drive piles or construct end bent caps until after bridge approach embankment waiting periods are complete.

Design and construct roadway embankments such that no more than two (2) inches of settlement shall occur following pavement construction. Roadway embankment settlement monitoring shall be required for locations when a total

D. Temporary Structures

Design temporary retaining structures, which include earth retaining structures and cofferdams, in accordance with current allowable stress design AASHTO *Guide Design Specifications for Bridge Temporary Works*, the *Temporary Shoring* Standard Special Provision found elsewhere in this RFP, and the applicable NCDOT Project Special Provisions available upon request by the Design-Build Team. The only submittal required to use the standard sheeting design is the "Standard Shoring Selection Form".

Traffic control barrier on top of walls shall be in accordance with the NCDOT Work Zone Traffic Control Unit details available upon request by the Design- Build Team. If anchored barrier is required, then anchor the barrier in accordance with NCDOT 2012 Roadway Standard Drawing No. 1170.01.

III. CONSTRUCTION REQUIREMENTS

All construction and materials shall be in accordance with the 2012 *Standard Specifications for Roads and Structures* and current NCDOT *Project Special Provisions* unless stated otherwise elsewhere in this scope of work. The Design-Build Team shall investigate, propose and incorporate remedial measures for any construction problems related to the following:

Foundations	Subgrades	Slopes
Retaining Walls	Settlement	Construction Vibrations

The NCDOT Geotechnical Engineering Unit shall review and accept these proposals prior to incorporation.

At Bridge No. 14 on SR 3569 (Raeford Road) over Bones Creek (Lake Rim Runoff), the Design-Build Team shall construct the bridge foundation, excavate for the substructure and storm water drainage system, and perform vibratory compaction of all soil and pavement materials when the Lake Rim water level has been lowered. The maximum allowable reduction in water depth shall be three feet below the normal water surface elevation; and the Lake Rim water level shall only be lowered between October 1st and February 28th. The Design-Build Team shall be responsible for all activities required to lower the Lake Rim water level, including but not limited to, coordinating with the NC Wildlife Resources Commission - Pechmann Fishing Education Center and the North Carolina Department of Environmental Quality - Division of Energy, Mineral and Land Resources prior to submitting an application to perform construction activities at Lake Rim. At a minimum the aforementioned application shall describe the method and time required to lower the lake, as well as how the lower water elevation will be maintained during construction. The Design-Build Team shall submit the application to perform construction activities at Lake Rim to the North Carolina Department of Environmental Quality - Division of Energy, Mineral and Land Resources via the NCDOT.

NCDOT will conduct pre and post-construction condition assessments on the Lake Rim dam and spillway. NCDOT will also conduct dam and spillway walkthroughs during construction to monitor potential changes in the dam and spillway conditions. The Design-Build Team shall be responsible for all costs associated with repairing damages to the dam and / or spillway caused by construction.

The Design-Build Team shall be responsible for any damage and / or claim caused by construction, including but not limited to damage caused by vibration (see Article 107-14 2012 *Standard Specifications for Roads and Structures*) and siltation or draining of ponds off the right of way. 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. At a minimum, the Design-Build Team shall perform pond preconstruction condition assessments as outlined in the NCDOT Geotechnical Engineering Unit *Guidelines and Procedures Manual for Subsurface Investigations.*

The prequalified geotechnical firm that prepared the foundation designs shall review the settlement monitoring data a minimum of once a month and issue a letter prior to releasing the embankment or approach fill from monitoring. Monitoring shall not be

H. Traffic Control Devices

The Design-Build Team shall use traffic control devices that conform to all NCDOT requirements and are listed on the NCDOT Approved Products List. The Approved Products List may be referenced on the website noted below:

https://apps.ncdot.gov/vendor/approvedproducts/

The use of any devices that are not shown on the NCDOT Approved Products List shall require written approval from the Design-Build Unit prior to incorporation.

Channelizing device spacing shall not exceed a distance in feet equal to twice the posted speed limit. Channelization devices shall be spaced ten feet on-center in radii. Channelization devices shall be three feet off the edge of an open travelway, when lane closures are not in effect. Skinny drums shall only be allowed as defined in Section 1180 of the NCDOT *Standard Specifications for Roads and Structures.*

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

Place sets of three drums perpendicular to the edge of the travelway on 500-foot centers when unopened lanes are closed to traffic. These drums shall be in addition to channelizing devices.

Portable changeable message signs should be placed off the shoulder of the roadway and behind a traffic barrier, if practical. Where a traffic barrier is not available to shield the portable changeable message sign, it should be placed off the shoulder and outside of the clear zone. If a portable changeable message sign must be placed on the roadway shoulder or within the clear zone, it shall be delineated with retroreflective temporary traffic control (TTC) devices. When portable changeable message signs are not being used to display TTC messages, they should be relocated such that they are outside of the clear zone or shielded behind a traffic barrier, and turned away from traffic. If relocation or shielding is not practical, the portable changeable message signs shall be delineated with retroreflective TTC devices.

In accordance with the Transportation Management Plans developed by the Design-Build Team and accepted by the Department, the Design-Build Team shall furnish, install and maintain TTC devices for the "all traffic must exit" temporary traffic pattern at the mainline / US 401 interchange. At the project completion, the aforementioned TTC devices shall remain on the project. All TTC devices that remain on the project shall 1) meet the requirements of their respective specifications in the 2012 *Standard Specifications for Roads and Structures*, 2) be in good condition, in the Engineer's sole discretion, and 3) become the property of the Department at final project acceptance.

In accordance with Section 1105 of the 2012 *Standard Specifications for Roads and Structures,* the Design-Build Team shall accept ownership and maintain the TTC devices remaining on the U-2519CB project for the "all traffic must exit" temporary traffic pattern at the mainline / Cliffdale Road interchange. At the completion of the U-2519CA / B-5516 project, the Design-Build Team, shall retain ownership of the aforementioned TTC devices, including but not limited to approximately 72 linear feet of Type III Barricades and 210 Drums.

I. Temporary Pavement Markings, Markers and Delineation

The Design-Build Team shall show temporary pavement markings on the TMP that meet the requirements of the RFP and the *Guidelines for Preparation of Traffic Control and Pavement Marking Plans for Design-Build Projects.*

The Design-Build Team shall only use pavement marking and marker products that conform to all NCDOT requirements and are listed on the NCDOT Approved Products List. The use of any devices that are not shown on the NCDOT Approved Products List shall require written approval from the Design-Build Unit prior to incorporation.

From January 1 – December 31, the Design-Build Team shall apply an additional 20# of Sericea Lespedeza on cut and fill slopes 2:1 or steeper.

Fertilizer shall be 10-20-20 analysis or a different analysis that provides a 1-2-2 ratio applied at a rate that provides the same amount of plant food as a 10-20-20 analysis and as directed.

Soil Analysis

If vegetation establishment indicates a deficiency in soil nutrients or an incurred pH level is present, the Design-Build Team shall take soil samples and apply additional soil amendments to the affected area and as directed.

Cut slopes unsuitable to support vegetation due to acidic ground water and / or soil shall be plated with Class B limestone rip rap sufficient to restrain erosion and prevent long term maintenance issues. The Design-Build Team shall submit soil pH samples, as requested, to determine the limits of the required Class B limestone rip rap plating. Class B limestone rip rap plating required on cut slopes for the conditions noted above will be paid for as extra work in accordance with Subarticle 104-8(A) of the 2012 *Standard Specifications for Roads and Structures* at a price of $50.00 per ton.

Excavated soil that does not meet Section 1019-2 of the NCDOT 2012 *Standard Specifications for Roads and Structures* shall not be left exposed or be used to plate shoulders or fill slopes.

All stone in erosion control devices that collect runoff from cut slopes that require Class B limestone rip rap plating, and / or the associated excavation, shall consist exclusively of limestone materials.

Fertilizer Topdressing

In accordance with the requirements noted below, the Design-Build Team shall apply a minimum of one Fertilizer Topdressing application to all permanently seeded areas immediately prior to completion of the project, twice during every growing season from April 1st through September 30th, and at other times as directed.

Fertilizer used for topdressing shall be 10-20-20 analysis applied at a rate of 500 pounds per acre; or a different analysis that provides a 1-2-2 ratio applied at a rate that provides the same amount of plant food as a 10-20-20 analysis, and as directed.

Fertilizer used for waste and borrow areas shall be 16-8-8 grade applied at a rate of 500 pounds per acre; or a different analysis that provides a 2-1-1 ratio applied at a rate that provides the same amount of plant food as a 16-8-8 analysis, and as directed.

Supplemental Seeding

For all supplemental seeding, the kinds of seed and proportions shall be the same as specified above for *Long Term Stabilization*, with the exception that centipede seed shall not be allowed in the seed mix. The rate of application for supplemental seeding shall be between 25# to 75# per acre. Prior to topdressing, the Design-Build Team shall determine the actual rate per acre for supplemental seeding and submit the supplemental seeding rate and areas to the Department for review and acceptance.

To prevent disturbance of existing vegetation, minimum tillage equipment, consisting of a sod seeder, shall be used to incorporate seed into the soil where degree of slope allows. Where degree of slope prevents the use of a sod seeder, a clodbuster (ball and chain) may be used.

Mowing

The minimum mowing height shall be four inches.

Design-Build Team and shall be included in the lump sum bid for the project. 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.

Designs shall be coordinated with the NCDOT Utilities Unit and the utility owners or their representatives. The Design-Build Team shall submit five (5) sets of 11 x 17 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 accepted by the State Utilities Manager, the plans, with the appropriate agreement, will be sent to the utility owner for review and concurrence.

The relocation of all water and sewer facilities shall be done in accordance with the NCDOT policies and standards, as well as the latest Fayetteville PWC water and sewer design requirements / specifications. The location of all water and sewer facilities shall also adhere to the following:

1) Existing and proposed water and / or sanitary sewer facilities shall not be located within the limits of retaining walls (e.g. facilities shall not be beneath retaining walls in a parallel or crossing alignment).

2) All existing and proposed water and / or sanitary sewer facilities beneath Future I-295 and / or US 401 shall be encased and the encasement pipe material shall be steel. Thirty four-inch steel encasement pipe shall be used to encase all 24-inch water and / or sanitary sewer facilities.

In the event of conflicting design parameters in the requirements noted above, the proposed design shall adhere to the most conservative values. The materials and appurtenances proposed by the Design-Build Team shall require approval by both NCDOT and the aforementioned appropriate utility owner prior to installation.

NCDOT has approved an Encroachment Request from Fayetteville PWC to install a 24-inch steel casing with a 12-inch ductile iron sanitary sewer main carrier pipe on the south side of the Unnamed Tributary to Lake Rim (Bones Creek). The installation of the aforementioned casing and sewer main is anticipated to be complete by the end of May 2016. It is the intent of NCDOT to **avoid** relocating this sanitary sewer once it is installed. If the Design-Build Team's design and / or construction methods require the relocation of this sewer main, all costs for those impacts and / or relocations shall be borne by the Design-Build Team.

Utility Relocation Plans

In the event of a utility conflict, other than water and sewer, the Design-Build Team shall request that the utility owner submit relocation plans (Highway Construction Plans to be provided by the Design-Build Team to utility owners) that show existing utilities and proposed utility relocations for approval by the NCDOT.

The Design-Build Team shall submit (3) three copies of the Utility Relocation Plans to the NCDOT State Utilities Manager , via the Design-Build Unit, for review and approval prior to