STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

July 6, 2018

Addendum No. 1

Contract No.:	C204157
TIP No.:	U-2719 / U-4437
County:	Wake
Project Description:	I-440 / US 1 from south of SR 1313 (Walnut Street) to north of SR 1728 (Wade Avenue); and Grade Separations on Beryl Road, Norfolk Southern Railway / North Carolina Railroad / CSX Transportation and NC 54 (Hillsborough Street) at SR 1664 (Blue Ridge Road)
RE:	Addendum No. 1 to Final RFP

September 18, 2018 Letting

To Whom It May Concern:

Reference is made to the Final Request for Proposals dated May 29, 2018 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 Technical and Price Proposal Submission to **August 28, 2018** and the date for the Price Proposal Opening to **September 18, 2018.** Please mark through the dates shown on the May 29, 2018 (Labeled) RFP and insert the new dates. This correction 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, second and third pages of the *Table of Contents* have been revised. Please void the first, second and third pages in your proposal and staple the revised first, second and third 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. 8 of the *Submittal of Quantities, Fuel Base Index Price and Opt-Out Option* Project Special Provision has been revised. Please void Page No. 8 in your proposal and staple the revised Page No. 8 thereto.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
CONTRACT STANDARDS AND
DEVELOPMENT UNIT
1591 MAIL SERVICE CENTER
RALEIGH, NC 27699-1591

Telephone: (919) 707-6900
Fax: (919) 250-4119
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH, NC 27610

Page No. 17 of the *Schedule of Estimated Completion Progress* Project Special Provision has been revised. Please void Page No. 17 in your proposal and staple the revised Page No. 17 thereto.

Page No. 87 of the *Price Adjustments for Asphalt Binder* Project Special Provision has been revised. Please void Page No. 87 in your proposal and staple the revised Page No. 87 thereto.

Page Nos. 189 and 190 of the *Architectural Concrete Surface Treatment* Project Special Provision have been revised. Please void Page Nos. 189 and 190 in your proposal and staple the revised Page Nos. 189 and 190 thereto.

Page No. 215 of the *Control of Noise* Project Special Provision has been revised. Please void Page No. 215 in your proposal and staple the revised Page No. 215 thereto.

Page Nos. 217 and 222 of the *General Section* have been revised. Please void Page Nos. 217 and 222 in your proposal and staple the revised Page Nos. 217 and 222 thereto.

Page Nos. 235, 237, 239, 240, 242, 245 and 246 of the *Roadway Scope of Work* have been revised. Please void Page Nos. 235, 237, 239, 240, 242, 245 and 246 in your proposal and staple the revised Page Nos. 235, 237, 239, 240, 242, 245 and 246 thereto.

Page Nos. 253, 256 and 258 of the *Environmental Permits Scope of Work* have been revised. Please void Page Nos. 253, 256 and 258 in your proposal and staple the revised Page Nos. 253, 256 and 258 thereto.

Page Nos. 283 and 284 of the *Geotechnical Engineering Scope of Work* have been revised. Please void Page Nos. 283 and 284 in your proposal and staple the revised Page Nos. 283 and 284 thereto.

Page Nos. 289, 291 and 292 of the *Hydraulics Scope of Work* have been revised. Please void Page Nos. 289, 291 and 292 in your proposal and staple the revised Page Nos. 289, 291 and 292 thereto.

Page Nos. 296 and 298 - 300 of the *ITS Scope of Work* have been revised. Please void Page Nos. 296 and 298 - 300 in your proposal and staple the revised Page Nos. 296 and 298 - 300 thereto.

Page Nos. 309 - 314 and 317 of the *Pavement Management Scope of Work* have been revised. Please void Page Nos. 309 - 314 and 317 in your proposal and staple the revised Page Nos. 309 - 314 and 317 thereto.

Page No. 328 of the *Public Involvement and Information Scope of Work* has been revised. Please void Page No. 328 in your proposal and staple the revised Page No. 328 thereto.

Page Nos. 330, 334 and 336 of the *Railroad Coordination Scope of Work* have been revised. Please void Page Nos. 330, 334 and 336 in your proposal and staple the revised Page Nos. 330, 334 and 336 thereto.

Page Nos. 357 and 361 of the *Structures Scope of Work* have been revised. Please void Page Nos. 357 and 361 in your proposal and staple the revised Page Nos. 357 and 361 thereto.

Page Nos. 389 and 393 - 400 of the *Transportation Management Scope of Work* have been revised. Please void Page Nos. 389 and 393 - 400 in your proposal and staple the revised Page Nos. 389 and 393 - 400 thereto.

Page No. 421 of the *Utilities Coordination Scope of Work* has been revised. Please void Page No. 421 in your proposal and staple the revised Page No. 421 thereto.

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

Sincerely,

DocuSigned by:
Ronald E. Davenport, Jr.
F81B6038A47A442...

Ronald E. Davenport, Jr., PE
State Contract Officer

RED/dth

cc: Ron Hancock, PE
Joey Hopkins, PE
Teresa Bruton, PE
David Hering, PE
File

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

FINAL REQUEST FOR PROPOSALS

DESIGN-BUILD PROJECT

TIP U-2719 / U-4437

May 29, 2018

VOID FOR BIDDING

XYZ Date

DATE AND TIME OF TECHNICAL AND PRICE PROPOSAL SUBMISSION: ~~**July 25, 2018**~~ August 28, 2018 BY **4:00 PM**

DATE AND TIME OF PRICE PROPOSAL OPENING: ~~**August 21, 2018**~~ September 18, 2018 AT **2:00 PM**

XYZ Date

CONTRACT ID: C204157

WBS ELEMENT NO. 35869.3.1 and 35868.3.4

FEDERAL-AID NO. IMSNHS-0440(10) and STBG-0054(030)

COUNTY: Wake

ROUTE NO. I-440 / US 1

MILES: 6.5

LOCATION: I-440 / US 1 from south of SR 1313 (Walnut Street) to north of SR 1728 (Wade Avenue); and Grade Separations on Beryl Road, Norfolk Southern Railway / North Carolina Railroad / CSX Transportation and NC 54 (Hillsboro Street) at SR 1664 (Blue Ridge Road)

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.*

STANDARD SPECIAL PROVISIONS

PROPOSAL FORMS - ITEMIZED SHEET, ETC.

*** PROJECT SPECIAL PROVISIONS ***

CONTRACT TIME AND LIQUIDATED DAMAGES

(7-12-7) DB1 G04A

The date of availability for this contract is October 29, 2018, 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 August 1, 2023.

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 **Twenty Thousand Dollars ($20,000.00)** 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 **Five Thousand Dollars ($5,000.00)** 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 **Twenty Thousand Dollars ($20,000.00)** per calendar day will be applicable to the early date for substantial completion proposed by the bidder. Liquidated damages of **Five Thousand Dollars ($5,000.00)** 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.

INTERMEDIATE CONTRACT TIME NUMBER 1 & LIQUIDATED DAMAGES / INCENTIVE

(3-22-07) DB 1 G07

Intermediate Contract Time #1 is for the full closure of NC 54 (Hillsborough Street), from just west of SR 1664 (Blue Ridge Road) to west of -DET- to perform all work necessary to complete the construction of the proposed bridge on NC 54 (Hillsborough Street) over SR 1664 (Blue Ridge Road) and adjacent roadway improvements.

same time and location as the Technical and Price Proposal. The originals shall be submitted in the Price Proposal.

Trade Secret Information submitted on the *Fuel Usage Factor Chart and Estimate of Quantities* sheets 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 **$2.1965** per gallon.

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

If the Design-Build Team elects not to pursue reimbursement for Fuel Price Adjustments for the lump sum items on the Itemized Proposal Sheet, 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 on both *Fuel Usage Factor Chart and Estimate of Quantities* sheets. Failure to complete both of these forms 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* sheets are submitted.

(E) **Failure to Submit**

Failure to submit both of the completed *Fuel Usage Factor Chart and Estimate of Quantities* sheets in a separate sealed package 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.

INDIVIDUAL MEETINGS WITH PROPOSERS

(9-1-11) DB1 G048

The Department will provide at least two Question and Answer Sessions to meet with each proposer individually to specifically address questions regarding the draft Requests for Proposals.

The Department will attempt to arrange a meeting between each individual proposer and North Carolina Railroad Company, Norfolk Southern Railway and CSX Transportation.

Fiscal Year	Progress (% of Dollar Value)
2019 (07/01/18 – 06/30/19)	7% of Total Amount Bid
2020 (07/01/19 – 06/30/20)	30% of Total Amount Bid
2021 (07/01/20 – 06/30/21)	28% of Total Amount Bid
2022 (07/01/21 – 06/30/22)	22% of Total Amount Bid
2023 (07/01/22 – 06/30/23)	12% of Total Amount Bid
2024 (07/01/23 – 06/30/24)	1% of Total Amount Bid

The Design-Build Team shall also furnish its own progress schedule in accordance with Article 108-2 of the 2018 *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.

DISADVANTAGED BUSINESS ENTERPRISE

(10-16-07) (Rev. 8-30-17) 102-15(J) SP1 G61 DB1 G061

Description

The purpose of this Special Provision is to carry out the U.S. Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts financed in whole or in part with Federal funds. This provision is guided by 49 CFR Part 26.

Definitions

Additional DBE Subcontractors - Any DBE submitted at the time of bid that will not be used to meet the DBE goal. No submittal of a Letter of Intent is required.

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

Contract Goal Requirement - The approved DBE participation at time of award, but not greater than the advertised contract goal.

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

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

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

Unconfined Compressive Strength

For Cement Treated Base Course, the Design-Build Team shall make field specimens, cure them for seven days and test them in the laboratory. The minimum and maximum acceptable unconfined compressive strength for soil cement shall be 450 psi and 850 psi, respectively. One test shall be required for every 400 feet per lane width at random locations selected using random number tables.

Submittals for Review During Construction

The Design-Build Team shall submit the unconfined compressive strength test results for review and acceptance.

PRICE ADJUSTMENTS FOR ASPHALT BINDER

(9-1-11) (Rev. 9-8-17) DB6 R25

Price adjustments for asphalt binder for plant mix will be made in accordance with Section 620 of the 2018 *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 **$535.56** per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on July 1, 2018.

PRICE ADJUSTMENTS - ASPHALT CONCRETE PLANT MIX

(9-1-11) (Rev. 9-8-17) DB6 R26

Revise the 2018 *Standard Specifications for Roads and Structures* as follows:

Page 6-15, Article 609-11 and Page 6-31, 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 $40.00 per theoretical ton. This price shall apply for all mix types.

Roads and Structures and as directed by the Engineer. Drilling spoils shall consist of all excavated material, including but not limited to water removed from the excavation either by pumping or drilling tools.

If unstable, caving or sloughing soils are anticipated or encountered, stabilize excavations with either slurry or steel casing. When using slurry, submit slurry details including product information, manufacturer's recommendations for use, slurry equipment information and written approval from the slurry supplier that the mixing water is acceptable before beginning drilling. When using steel casing, use either the sectional type or one continuous corrugated or non-corrugated piece. Steel casings shall consist of clean watertight steel of ample strength to withstand handling and driving stresses and the pressures imposed by concrete, earth or backfill. Use steel casings with an outside diameter equal to the hole size and a minimum wall thickness of ¼-inch.

2. Concrete Placement

Before placing concrete, center and support the pile in the excavation and check the water inflow rate in the excavation after any pumps have been removed. If the inflow rate is less than six inches per half hour, remove any water and free fall the concrete into the excavation. Ensure that concrete flows completely around the pile. If the water inflow rate is greater than six inches per half hour, propose a concrete placement procedure to the Engineer. The Engineer shall approve the concrete placement procedure before placing any concrete.

Fill the excavation with Class A concrete in accordance with Section 1000 of the 2018 *Standard Specifications for Roads and Structures*, except as modified herein. Provide concrete with a slump of six to eight inches. Use an approved high-range water reducer to achieve this slump. Place concrete in a continuous manner and remove all casings.

WORKING DRAWINGS

In accordance with Article 1077-2 of the 2018 *Standard Specifications for Roads and Structures*, submit casting drawings for the precast face panels for approval prior to casting. Show the inserts, method of handling, and support details used for transportation on casting drawings. Submit metalwork fabrication drawings for approval prior to fabrication of steel wall components. Submit an erection plan and concrete face panel placing plan, including location of various heights of panels, for review and acceptance prior to fabrication of metalwork. Submit five sets of detail drawings for review and acceptance.

ARCHITECTURAL CONCRETE SURFACE TREATMENT

(1-28-15) (Rev. 11-16-17)

1.0 GENERAL

Unless noted otherwise elsewhere in this RFP, the work covered by this Project Special Provision shall consist of constructing 1) a stained, simulated brick textured surface on

both faces of pre-cast concrete panels used in all sound barrier walls, 2) a stained fractured fin pattern on the exposed face of retaining walls facing the NC Museum of Art, and 3) a stained stone pattern on the exposed face of retaining walls facing Meredith College and / or the greenway north of Wade Aveune, as indicated on the plans developed by the Design-Build Team and herein. The Design-Build Team shall furnish all materials, labor, equipment and incidentals necessary for the construction of architectural concrete surface treatment using simulated brick form liners (molds) and a compatible concrete coloring system.

The Design-Build Team shall use the same source of form liner and color stains for all sound barrier wall panels and retaining walls. The architectural concrete surface treatment for the fractured fin pattern for retaining walls facing the NC Museum of Art will be coordinated post Award. The architectural concrete surface treatment for the stone pattern for retaining walls facing Meredith College and / or the greenway north of Wade Avenue shall match the pattern and coloring of the existing retaining walls along the greenway and pedestrian bridge north of Wade Avenue. The architectural concrete surface treatment for all sound barrier walls and all other retaining walls shall match the appearance (brick size, brick shape, brick texture, pattern and relief) to resemble a standard brick pattern with panel staining **on both sides** to match the Brown Palette Color # XXX found in the *Federal Standard 595B – Colors Used in Government Procurement* to be provided by the Department. All texture shall be in addition to the nominal thickness of the wall panels of four inches ± ¼ inch. Maximum relief of the textured surface shall be 0.25 inch or less. The top 1'-0" of the top panel within each sound barrier wall segment shall have a smooth, non-textured and non-stained finish to resemble faux coping. Concrete columns shall remain unstained in their natural concrete color. There shall be an appreciable contrast between the colors of the unstained concrete columns and the stained panels. For information purposes only, sources of form liners in the standard brick pattern include, but are not limited to:

Scott System, Inc.
10777 E. 45th Avenue
Denver, Colorado 80239
http://www.scottsystem.com/
Pattern: To be provided

Architectural Polymers, Inc.
1220 Little Gap Road
Palmerton, Pennsylvania 18071
http://www.architecturalpolymers.com/
Pattern: To be provided

Fitzgerald Form Liners
1500 East Chestnut Avenue
Santa Ana, California 92701
http://formliners.com/
Pattern: To be provided

The Design-Build Team has the option of supplying an alternative pattern of simulated brick form liner, as long as the pattern selected is approved, in writing, as an equal or approved alternative by the Engineer.

2.0 SUBMITTALS

Shop Drawings – The Design-Build Team shall submit for review and acceptance, plan and elevation views and details showing overall simulated brick pattern, joint locations,

Care shall be taken to avoid damage to existing components (e.g. filter fabric and irrigation system) within the median planter trough. Filter fabric shall be maintained free of wrinkles or gaps during the soil-mix filling operation.

If during stockpiling, the installation process, or after installation weeds begin to germinate, they shall be treated with a post-emergence herbicide before the undesirable vegetation reaches eight inches in height. If a bio-mass of eight inches or more should develop the Design-Build Team shall physically remove it from the planter. The use of any herbicide must be approved by the Engineer prior to use. All applications shall be performed by a licensed pesticide applicator according to General Statutes administered by the North Carolina Department of Agriculture and Consumer Services.

CONTROL OF NOISE

The Design-Build Team shall minimize the noise impact on adjoining properties with any type of residence (single family, multi family, apartments, dormitories, etc.) between 10:00 p.m. and 7:00 a.m. The exterior noise level at any residence resulting from the work shall not exceed 80 decibels. Noise levels shall be measured at a height of five feet above the ground within 20 feet of the residential structure or at the right of way line closest to residential structure, whichever is furthest from construction. Testing shall occur at the residence closest to the construction work within the respective Noise Study Areas as identified in the Design Noise Reports developed by the Design-Build Team.

Work shall be performed in a manner to prevent nuisance conditions such as noise which exhibits a specific audible frequency or tone or impact noise (e.g. jackhammers, hoe rams, truck tailgates, pile drivers, rock drilling, concrete pavement demolition, etc.). The Engineer will determine whether or not nuisance noise conditions exist. All equipment shall be operated in accordance with the manufacturer's specifications and be equipped with all noise reducing equipment in proper operating condition.

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-2719 / U-4437 consists of widening US 1 / US 64 and I-440 / US 1 from south of SR 1313 (Walnut Street) to north of SR 1728 (Wade Avenue), a distance of approximately 6.5 miles. The project will modify interchanges and replace bridges along I-440 / US 1; and provide grade separations on Beryl Road, Norfolk Southern Railway / North Carolina Railroad / CSX Railroad, NC 54 (Hillsborough Street) at SR 1664 (Blue Ridge Road).

Project services shall include, but are not limited to:

- **Design Services –** completion of construction plans
- **Construction Services –** necessary to build and ensure workmanship of the designed facility
- **Intelligent Transportation System –** design and construction of ITS components, including CCTV cameras, dynamic message signs (DMS), fiber-optic communications cable and conduit, and ITS integration
- **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**

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

The following project planning documents have been completed:

- The U-2719 Environmental Assessment (EA) was approved on June 23, 2017.
- The U-2719 Finding of No Significant Impact (FONSI) was approved on May 24, 2018.
- The U-4437 Categorical Exclusion (CE) was approved on September 26, 2012.
- The U-4437 Project Environmental Consultation Form was approved on May 23, 2018.

****NOTE**** Deleted paragraph on development of environmental documents

list and Confidentiality Agreements to Mr. Ronald E. Davenport, Jr., P.E., State Contract Officer, within ten business days of the issuance of the Industry Draft RFP, and provide updated lists and Confidentiality Agreements, as appropriate, throughout the project procurement / duration.

Failure to comply with the terms stated above in this section may 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 TECHNICAL AND PRICE PROPOSALS

Technical and / or Price Proposals that do not adhere to all the requirements noted below may be considered non-responsive and may result in the Department not considering the Design-Build Team for award of the contract or reading their Price Proposal publicly.

GENERAL

Technical and Price Proposals will be accepted until **4:00 p.m. Local Time on Tuesday, August 28, 2018**, at the office of the State Contract Officer:

Mr. Ronald E. Davenport, Jr., 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 C204157
TIP Number U-2719 / U-4437
Wake County
US 1 / US 64 and I-440 / US 1 from south of SR 1313 (Walnut Street) to north of SR 1728 (Wade Avenue); and Grade Separations on Beryl Road, Norfolk Southern Railway / North Carolina Railroad / CSX Railroad and at NC 54 (Hillsborough Street) at SR 1664 (Blue Ridge Road)

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

ROADWAY SCOPE OF WORK (6-17-18)

It should be noted that all references to TIP Projects U-2719 and U-4437 in material provided by the Department shall apply to this project.

Throughout this RFP, references to the Preliminary Roadway Plans shall denote the U-2719 Combined Public Hearing Map (Rolls 1-6, and 8), U-4437 Combined Public Hearing Map, and PREFERRED_B_Alt3Rev1 design files.

Throughout this RFP, references to the "mainline" shall apply to US 64 / US 1 and I-440 / US 1.

Project Details

- The Design-Build Team shall design and construct a six-lane divided freeway with a minimum 22-foot median throughout the pavement reconstruction limits from south of I-40 to the southern limits of the mainline bridges over Lake Boone Trail in Wake County. Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct the mainline providing the same or better access, widening, improvements and traffic measures of effectiveness, in the Department's sole discretion, included in the Preliminary Roadway Plans provided by the Department. The limits of the mainline construction shall be of sufficient length to tie to existing based upon the current NCDOT guidelines and standards. The mainline shall be designed and constructed to meet a 70 mph design speed for a rolling urban freeway designed to interstate standards. The mainline shall be designed and constructed in accordance with the AASHTO *A Policy on Geometric Design of Highways and Streets*, Table 3-10b (e_{max} = 8%). The Design-Build Team shall provide all other design criteria in the Technical Proposal.

- The Design-Build Team shall design and construct 12-foot mainline travel lanes. Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct minimum 14-foot outside shoulders (12-foot useable shoulder width plus two feet), 12-foot of which shall be ful-depth paved shoulders, including all acceleration, deceleration and auxiliary lanes, and ramps / loops to the back of the gore (12-foot width).

- From the southern project limits to approximately Station 248+00 -L1-, as shown on the Preliminary Rodway Plans provided by the Department, the Design-Build Team shall design and construct the mainline median shoulders as follows:

  - From the southern project limits to approximately Station 148+45 -L1-, design and construct minimum ten-foot or the existing width, whichever is greater, full-depth paved shoulders.

- From approximately Station 148+45 -L1- to approximately Station 248+00 -L1-, design and construct minimum 14-foot median shoulders (12-foot useable shoulder width plus two feet), 12-foot of which shall be full-depth paved shoulders unless noted otherwise elsewhere in this RFP.

- elsewhere in this RFP, the minimum loop design speed shall be 30 mph with a minimum 230-foot radius.
- The Design-Build Team will not be required to design or construct ramps or bridges to accommodate future loops.
- The Design-Build Teams are encouraged to propose modifications to the mainline / NC 54 (Hillsborough Street) interchange and the mainline / SR 1728 (Wade Avenue) interchange shown on the Preliminary Roadway Plans provided by the Department to address any or all of the following concerns and issues:
  - Minimize impacts to the NC State University property, and to NC State University and NC State University Club facilities, including but not limited to parking, tennis courts, and the short-course golf practice facility.
  - The Department prefers that the structures noted on the NCSU Buildings to Miss Map provided by the Department are not impacted. If the Design-Build Team's design and / or construction methods impact any of the structures on the aforementioned Map, the Design-Build Team shall specify the extent of the impacts and justification in the Technical Proposal.
  - Except for the greenway spur noted below, minimize impacts to Meredith College property and facilities, including but not limited to parking, athletic facilities, and developable property. Meredith College is most concerned about preserving the west side of their main campus that is impacted by -353RBD- and -353CDC-.

  With the exception of providing access to the NC State University short-course golf practice facility, any proposed change to the aforementioned interchanges shall not 1) increase impacts to the NC State University property, NC State University facilities, NC State University Club facilities, Meredith College property, Meredith College facilities, or NC Museum of Art property; or 2) reduce the design speed of any collector-distributor road, ramp, loop, or flyover as shown on the Preliminary Roadway Plans provided by the Department.

  During construction, the Design-Build Team shall install and maintain, in good working order, a six-foot high construction fence between the existing greenway and Meredith College. Once the aforementioned construction fence is no longer required, the Design-Build Team shall install a seven-foot high black ornamental fence with metal pickets along the eastern edge of the greenway easement. The Design-Build Team shall tie the fence to the Moore Drive culvert to the north and the existing wooden fence along the portion of greenway parallel to Hillsborough Street to the south. The Design-Build Team shall provide a 12-foot wide gated opening at the existing gravel maintenance path between the overflow parking lot and the soccer field. The ornamental fence shall be one of the following types:

AMERISTAR	Ultra Aluminum Mfg., Inc.
AEGIS II Invincible	UAD 100 Defender Spear Top

- Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct all diverging diamond interchanges (DDI), in accordance with the requirements noted below:
  - Between and through the DDI crossovers, the Design-Build Team shall design and construct lane widths that accommodate a WB-67; however, the minimum lane width between and through the DDI crossovers shall be 15 feet. All approach / departure lanes to / from the crossovers shall be tapered to the crossover lane-width prior to entering / after exiting the curve approaching / departing the crossover.
  - The Design-Build Team shall design and construct lane widths for all spurs (right and left turn movements from / to the ramps) that accommodate a WB-67; however, the minimum spur lane width shall be 15 feet. All approach / departure ramp lanes to / from the spurs shall be tapered to the spur lane width prior to entering / after exiting the spur. Regardless

- Within the freeway section, the Design-Build Team shall design and construct the SR 1728 (Wade Avenue) shoulders, in accordance with the following requirements:

  - Design and construct minimum 14-foot outside shoulders (12-foot useable shoulder width plus two feet), 12-foot of which shall be full-depth paved shoulders, including all acceleration, deceleration and auxiliary lanes, and ramps / loops to the back of the gore (12-foot width).

  - Design and construct minimum 14-foot median shoulders (12-foot useable shoulder width plus two feet), 12-foot of which shall be full-depth paved shoulders.

- The preferred alternatives for the Athens Drive, Melbourne Road, and Ligon Street are Replace Bridge in Place, Replace Bridge in Place, and Bridge to North respectively.

- The Design-Build Team shall design and construct Ligon Street to provide two twelve-foot lanes with curb and gutter and ten-foot berms. The Design-Build Team shall design and construct five-foot sidewalks on both sides of Ligon Street. The minimum design speed for Ligon Street shall be 30 mph.

- The Design-Build Team shall not design or construct the exclusive left turn lane on Melbourne Drive at the Kaplan Drive intersection as shown on the Preliminary Roadway Plans provided by the Department. However, the Design-Build Team shall retain or replace, in kind, the existing traffic island at the Melbourne Drive / Kaplan Drive intersection.

- On SR 1319 (Jones Franklin Road), the Design-Build Team shall design and construct a 23-foot median with 11-foot travel lanes and five-foot bike lanes in both directions. All medians along SR 1319 (Jones Franklin Road) that are greater than eight-foot in width, measured face to face from the surrounding mountable concrete curb and gutter or from edge of pavement to edge of pavement, as appropriate, shall be grass. In lieu of the concrete island shown on the Preliminary Roadway Plans provided by the Department, the Design-Build Team shall provide a painted island on SR 1319 (Jones Franklin Road) north of Barringer Drive.

- The Design-Build Team shall not design or construct the monolithic concrete island along Capital Center Drive at the SR 1319 (Jones Franklin Road) intersection.

- The Design-Build Team shall design and construct a Vick Charles Drive that connects to Capital Center Drive with a minimum 30'-0" wide curb and gutter turnout.

- For the existing Denise Drive properties with driveway connections, the Design-Build Team shall design and construct driveway extensions that connect to Capital Center Drive. Upon completion of the aforementioned driveway extensions, the Design-Build Team shall remove and dispose of the abandoned Denise Drive pavement.

- In addition to the sidewalks and greenways shown in the Preliminary Roadway Plans provided by the Department, the Design-Build Team shall design and construct 1) the sidewalks and greenways shown in the U-2719 / U-4437 Additional Sidewalk Location Map

provided by the Department, and 2) a greenway spur that connects the proposed greenway along Hillsborough Street to the existing greenway on Meredith College in proximity to Station 43+00 -Y30-. In case of conflicting design parameters, and / or ranges, in the Preliminary Roadway Plans and the aforementioned Map, the proposed design shall adhere to the most conservative values.

- Unless noted otherwise elsewhere in this RFP, all berm widths shall be a minimum of ten feet wide or the width of the associated sidewalk plus two feet, whichever is greater.

- At the southeast corner of the Beryl Road bridge over SR 1664 (Blue Ridge Road), the Design-Build Team shall design and construct a minimum ten-foot wide ADA compliant pedestrian access facility that connects the sidewalk located along the south side of Beryl Road to the sidewalk located along the east side of SR 1664 (Blue Ridge Road).

- Due to right of way constraints, the Design-Build Team will be allowed to design and construct minimum ditch widths for the facility functional classification.

- Unless noted otherwise elsewhere in this RFP, all bridge rail offsets shall be the greater of 1) the bridge rail offset as indicated in the NCDOT *Roadway Design Manual,* 2) the approach roadway paved shoulder width, or 3) the offset required to achieve stopping sight distance (maximum 12-foot). Narrower bridge rail offsets based on bridge length will not be allowed. The Design-Build Team will not be required to widen existing bridges solely to provide the aforementioned minimum bridge rail offsets.

- The Design-Build Team shall design and construct all -Y- Lines such that the through movement is not required to change lanes throughout the project limits.

- The Design-Build Team shall design and construct at-grade intersections with the lane configurations as noted in the February 2018 Year 2040 No-Build and Build Traffic Operations Technical Memorandum for U-2719 Project and the March 2012 STIP U-4437 (Blue Ridge Road) Final Traffic Analysis Technical Memorandum provided by the Department.

- At all intersections impacted by the Design-Build Team's design and / or construction, excluding resurfacing, the Design-Build Team shall design and construct turn lanes that adhere to the greater of the following:

  - All turn lane lengths shall adhere to the NCDOT minimum turn lane lengths as defined in the NCDOT *Roadway Design Manual* (Reference Section 9-1, Figure 4).

  - All lengths for the turn lanes required by the aforementioned February 2018 Year 2040 No-Build and Build Traffic Operations Technical Memorandum for U-2719 Project and the March 2012 STIP U-4437 (Blue Ridge Road) Final Traffic Analysis Technical Memorandum provided by the Department shall adhere to the NCDOT Recommended Treatment for Turn Lanes. These lengths shall be determined by adding the storage length defined in the aforementioned memorandums and the minimum deceleration

design and construct minimum four-foot full-depth paved shoulders through the limits of the chicanes.

- The Design-Build Team shall design and construct minimum 18-foot travel lanes inside the roundabout.

- The Design-Build Team shall design and construct 1'-6" mountable curb and gutter between the roundabout lane and the concrete truck apron. The Design-Build Team shall design and construct 2'-6" curb and gutter between the truck apron and the center island.

- At all intersections with restricted movements impacted by the Design-Build Team's design and / or construction methods, excluding resurfacing, the Design-Build Team shall provide five-inch keyed-in concrete monolithic channelization islands, regardless of the island dimensions. (Reference Roadway Standard Drawing No. 852.01)

- The mainline is a full control of access facility. The Design-Build Team shall bring to the Design-Build Unit's attention any deviations from the proposed control of access shown on the Preliminary Roadway Plans provided by the Department. The proposed right of way and / or control of access limits may deviate in proximity to cultural, historic, or otherwise protected landmarks, including cemeteries, to eliminate / minimize impacts. Prior to negotiating right of way, easement and / or control of access with property owners, the Department shall accept the Right of Way Plans developed by the Design-Build Team.

- Prior to installation, the Design-Build Team shall be responsible for coordinating with, and obtaining approval from, the NCDOT for the control of access fence placement. The Design-Build Team shall be responsible for installation of the control of access fence as noted below:

  - Along the greenway spur at Hillsborough Street, the Design-Build Team shall install a six-foot high black vinyl coated chain link fence with a ten-foot wide opening. The Design-Build Team shall tie the aforementioned fence to the existing control of access fence at the edge of the cleared area required to construct the greenway spur.

  - Unless noted otherwise elsewhere in this RFP, all control of access fence shall be woven wire.

  - Throughout the construction limits, excluding areas that consist solely of pavement marking obliterations / revisions, the Design-Build Team shall remove and dispose of all existing control of access fence, and install new control of access fence.

  - The Design-Build Team shall replace all control of access fence damaged during construction.

  - The Design-Build Team shall install all missing control of access fence.

- Except as required elsewhere in this RFP and / or to eliminate a design exception, the Design-Build Team shall not further impact any cultural, historical or otherwise protected landmark or topographic feature beyond that shown on the Preliminary Roadway Plans provided by the Department.

- Sidewalk transitions, from proposed sidewalk width to existing sidewalk width, shall be a minimum of 50 feet.

The proposed design revisions noted above shall be subject to the Department's review and acceptance.

- Design exceptions will not be allowed for the mainline, 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.

- Prior to recording the Right of Way Plans, the Design-Build Team shall locate and install right of way markers that delineate the proposed right of way for all parcels within the project limits. The Design-Build Team will be allowed to temporarily delineate the aforementioned proposed right of way with temporary metal caps and fiberglass markers prior to recording the Right of Way Plans. However, prior to final project acceptance, the Design-Build Team shall locate and install permanent concrete right of way markers to delineate the aforementioned proposed right of way. The Design-Build Team shall remove and dispose of all metal caps and fiberglass markers used to temporarily delineate the proposed right of way. For all parcels, the Design-Build Team shall locate and install metal caps with fiberglass markers that delineate all proposed 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 Department will provide an approved Traffic Noise Report (TNR) and associated Preliminary Noise Wall Recommendation Memorandum that is based on the Department's preliminary design. The Design-Build Team shall evaluate the **entire** U-2719 and U-4437 Projects (including all existing sound barrier walls) and develop the Design Noise Reports (DNR) based on the plans developed by the Design-Build Team, regardless of changes to the Department's preliminary design. The U-2719 DNR shall be developed in accordance with the NCDOT 2016 Traffic Noise Policy and the NCDOT 2016 Traffic Noise Manual, and the U-4437 DNR shall be developed in accordance with the NCDOT 2011 Traffic Noise Abatement Policy and the NCDOT 2011 Traffic Noise Analysis and Abatement Manual; both DNRs will be reviewed and accepted by NCDOT. Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall include all design and construction costs for all sound barrier walls required by the accepted DNRs, as well as all costs associated with performing any additional geotechnical investigations necessary to design the foundations, in the lump sum price bid for the entire project. However, the Design-Build Team will not be required to include any designs associated with the proposed sound barrier walls in the Technical Proposal. Prequalification under Discipline Code 441 shall be required for the firm developing the DNR.

  In accordance with the Federal Highway Administration (FHWA) Guidelines located on the website noted below, the Design-Build Team shall evaluate all existing sound barrier walls within the project limits, and design and construct the resulting required noise abatement, including but not limited to retrofitting and / or replacing existing sound barrier walls. The Design-Build Team shall include all design and construction costs to lengthen existing sound barrier walls in the lump sum price bid for the entire project. In accordance with Subarticle 104-8(A) of the 2018 *Standard Specifications for Roads and Structures,* the design and construction costs to raise and / or replace an existing sound barrier wall will be paid for as extra work at the unit price of $40.00 per square foot. All work tasks required to design and construct the additional sound barrier wall height and / or replacement sound barrier wall(s), including but not limited to traffic control, pavement, drainage, concrete barrier, geotechnical investigation and earthwork shall be considered inclusive in the aforementioned unit price. The amount of extra work shall be determined by deducting all additional sound barrier wall height and / or sound barrier wall replacement square footage required as a result of horizontal and / or vertical alignment changes to the Preliminary Roadway Plans provided by the Department from the

additional sound barrier wall height and / or sound barrier wall replacement square footage required by the Department's preliminary design.

https://www.fhwa.dot.gov/environment/noise/noise_barriers/abatement/existing.cfm

The Design-Build Team is cautioned that the TNR and Preliminary Noise Wall Recommendation Memorandum are provided to show the general location of potential walls. Thus, as with all information provided by the Department, the TNR and Preliminary Noise Wall Recommendation Memorandum are provided for informational purposes only and; the Department will not honor any requests for additional contract time or compensation for any variations between the approved TNR and the approved DNR.

The Department will ballot all benefited receptors to determine which sound barrier walls recommended in the accepted DNR will be constructed. The Design-Build Team shall (1) develop and provide the information required by the Department to complete the balloting process, and (2) attend and / or speak at all balloting meetings and workshops. The Department will require four months to complete the balloting process. The Department will not honor any requests for additional contract time or compensation for the sound barrier wall construction unless the aforementioned four-month timeframe is exceeded. If time were granted, it would only be for that time exceeding the four-month period, which shall begin on the date the Department accepts the DNR developed by the Design-Build Team. The Design-Build Team shall not construct any sound barrier walls until the balloting process has been completed by the Department.

In accordance with Subarticle 104-8(A) of the 2018 *Standard Specifications for Roads and Structures,* if the accepted DNR and balloting process require more than 240,000 square feet (sf) of sound barrier wall, the amount over 240,000 sf will be paid for as extra work at the unit price of $40.00 per square foot. All work tasks required to design and construct the additional sound barrier walls, including but not limited to traffic control, pavement, drainage, concrete barrier, geotechnical investigation and earthwork shall be considered inclusive in the aforementioned unit price. The amount of extra work shall be determined by deducting 1) all additional sound barrier wall square footage required as a result of horizontal and / or vertical alignment changes to the Preliminary Roadway Plans provided by the Department, 2) all sound barrier wall square footage required to raise an existing sound barrier wall, and 3) all sound barrier wall square footage required to replace an existing sound barrier wall from the accepted DNR and balloting process sound barrier wall total square footage.

The Design-Build Team shall only credit the Department the construction cost of all sound barrier walls eliminated by the balloting process. The construction costs of all sound barrier walls eliminated solely by the balloting process shall be deducted from the lump sum amount bid for the entire project.

At all sound barrier walls, the Design-Build Team shall provide 1) a four-foot berm between the wall and fill / cut slopes steeper than 6:1 and 2) a parallel concrete ditch at locations where the final grade slopes toward the wall.

** NOTE ** Removed duplicate paragraph

The Design-Build Team shall design and construct all sound barrier walls a minimum of ten feet inside the right of way.

To satisfy the FHWA's Abatement Measure Reporting requirements, the Design-Build Team shall prepare and concurrently submit a summary of the sound barrier walls to be constructed on the project with the final sound barrier wall working drawings submittal. The Design-Build Team shall submit the sound barrier wall summary directly to the NCDOT Traffic Noise and Air Quality Group and include the information noted in Title 23 Code of Federal Regulations Part 772 Section 772.13(f), including but not limited to overall cost and unit cost per square foot.

ENVIRONMENTAL PERMITS SCOPE OF WORK (6-11-18)

General

The Design-Build Team shall be responsible for preparing all documents necessary for the Department to obtain the environmental permits required for the project construction. Permit applications shall be required for the US Army Corps of Engineers (USACE) Section 404 Permit, the NC Department of Environmental Quality, Division of Water Resources (NCDWR) Section 401 Water Quality Certification and Neuse Riparian Buffer Authorization.

The Design-Build Team shall not begin ground-disturbing activities in jurisdictional resources until the environmental permits have been issued.

The Design-Build Team shall coordinate with the Design-Build Unit to determine if a Preconstruction Notification (PCN) is required for the Nationwide Permit No. 6. If a PCN is required, the Design-Build Team shall submit all necessary documents and forms to the Design-Build Unit for submittal to the appropriate agencies and shall not perform any geotechnical investigative work within the jurisdictional resource(s) requiring a PCN prior to obtaining the required approval. If a PCN is not required, the Design-Build Team may proceed with geotechnical investigations inside and outside jurisdictional resources, provided all of the Nationwide Permit No. 6 General Conditions are adhered to.

The Design-Build Team may begin construction activities prior to obtaining the aforementioned permits provided that (1) the Department has reviewed and accepted the appropriate design submittal(s); (2) the Department is notified in writing and provides written approval prior to beginning work; and (3) such activities are outside jurisdictional resources. The Design-Build Team is encouraged to advance as many construction activities as possible outside jurisdictional resources prior to issuance of the environmental permits. The Design-Build Team shall indicate the specific construction activities that will occur outside jurisdictional resources prior to obtaining the environmental permits and their anticipated start date in the Technical Proposal.

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 Department's Environmental Analysis Unit (EAU) - Environmental Coordination and Permitting Group (ECAP) or the Division's Environmental Officer (DEO) present. A representative from the Design-Build Unit shall be included on all correspondence.

The Department has reached Concurrence Point 4A for U-2719 in the Merger Process used by the environmental agencies and the Department to obtain environmental permits for projects. The Design-Build Team shall participate and present information for Concurrence Points 4B and 4C that are necessary to complete the Merger Process. Project U-4437 is not in the aforementioned Merger Process. However, the Design-Build Team shall present proposed impacts associated with U-4437 during the Concurrence

The NCDOT hereby commits to ensuring, to the greatest extent practicable, 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. In accordance with the Department of Water Resources' NCG 010000, all fill material shall be 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 Design-Build Team shall only be allowed if the Engineer determines it to be in the best interest of the Department and shall be strongly discouraged. The Design-Build Team shall not take an iterative approach to hydraulic design issues. Prior to submitting the permit application, the hydraulic design shall be complete and accepted by the Department.

The Design-Build Team should expect it to take up to 11 months to accurately and adequately complete all designs necessary for the permit application, submit the permit application to the Department, and obtain permit approvals from the environmental agencies. Environmental agency review time will be approximately 120 days from receipt of a "complete" permit application. No requests for additional contract time or compensation will be allowed if the permits are obtained within this 11-month period. 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 11-month period has been exceeded. If time were granted it would be only for that time exceeding the 11-month period. This 11-month period is considered to begin on the Date of Availability as noted elsewhere in the RFP.

The Design-Build Team is advised herein that the approximate timeframes listed above for the DCM, NCDWR, and the USACE to review a permit application begin only after a fully complete and 100% accurate submittal.

Mitigation Responsibilities of the Design-Build Team

As required by the NEPA Process and the USACE / EPA Section 404(b)(1) Guidelines, to offset potential wetland and stream impacts, the Department has reviewed the roadway project corridor for potential on-site mitigation opportunities. Since no on-site mitigation opportunities were identified, the Department will acquire the compensatory mitigation for unavoidable impacts to wetlands and surface waters due to the project construction from the NC Division of Mitigation Services. This amount of mitigation acquired will be based on impacts, as identified in the U-2719 Finding of No Significant Impact approved on May 24, 2018. No impacts to jurisdictional resources are proposed for U-4437.

Any changes proposed by the Design-Build Team to any design or construction details provided by the Department shall be approved by the Department prior to being submitted to the environmental agencies for their approval.

of its contractors and / or agents associated with the construction or maintenance of this project with a copy of the permits and certifications.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall strictly adhere to these commitments, as well as others, including but not limited to, those included in the U-2719 Environmental Assessment and Finding of No Significant Impact (FONSI), and U-4437 Categorical Exclusion and Project Environmental Consultation Form, all permits, all interagency meetings, and all site visits.

If the Design-Build Team discovers any previously undocumented historic or archaeological resources while conducting the authorized work, they shall immediately suspend activities in that area and notify, in writing, the NCDOT Archaeology Group Leader and NCDOT Project Development Engineer, as listed below, who will initiate any required State / Federal coordination after a timely initial assessment. The Design-Build Team shall also immediately notify a representative from the Design-Build Unit. Inadvertent or accidental discovery of human remains shall be handled in accordance with North Carolina General Statutes 65 and 70. All questions regarding these discoveries shall be addressed to Mr. Matthew Wilkerson, NCDOT Archaeology Group Leader at (919) 707-6089, or Jamie Lancaster, NCDOT Project Engineer at (919) 707-6620.

- Sound barrier walls
- Subgrades
- Settlement
- Slopes
- Construction vibrations

- The prequalified geotechnical firm which prepares the foundation designs shall review and approve all pile driving hammers and drilled pier construction sequences. After the prequalified geotechnical firm has approved these submittals, the Design-Build Team shall submit them to the NCDOT for review and acceptance prior to beginning construction. Hammer approvals shall be submitted prior to performing any pile driving and shall be performed using GRLWEAP Version 2010 or later.

- The prequalified geotechnical firm which prepares the original foundation designs shall be responsible for any necessary changes to the foundation designs revising analysis, recommendations, and reports as needed. 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 to the NCDOT for review and acceptance.

- 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 of the NCDOT 2018 Standard Specifications for Roads and Structures). The Design-Build Team shall be responsible for deciding if any pre- and post-construction monitoring and inventories need to be conducted. Any monitoring and inventory work shall be performed by a prequalified consulting firm.

- Prequalification of contractors is not required for pile excavation or drilled-in pile holes that are 30 inches in diameter or less. Class A concrete or grout shall be required to backfill holes for drilled-in piles.

- Use Pile Driving Analyzer (PDA) testing on a minimum of two production piles for each pile size and type for each bridge with driven piles using the approved hammer driving system for the pile. The two test piles shall not be located at the same bent to meet this requirement. PDA test piles shall be spread out across the bridge to provide data across the entire bridge site. Drive criteria at each bent shall be based on the PDA test pile most representative of the conditions at the bent and shall be approved by NCDOT. PDA testing shall be performed during initial drive and as necessary for re-strikes of the tested pile. Changes in hammer driving systems and / or additional similar hammer driving systems shall require additional PDA testing. Additional PDA testing may be warranted based on AASHTO *LFRD Bridge Design Specifications* and shall be recommended as needed by the geotechnical foundation design engineer and submitted to the NCDOT for review and acceptance.

- The PDA Consultant shall perform PDA testing, provide PDA reports, and develop pile driving inspection charts or tables. All recommendations shall be submitted to NCDOT for review and acceptance prior to driving any additional production piles at the applicable bridge.

- For drilled piers the following shall apply:

    - Use current NCDOT inspection forms for drilled piers available on the NCDOT Geotechnical Engineering Unit's webpage. Construct and inspect drilled piers in accordance with Section 411 of the 2018 NCDOT *Standard Specifications for Roads and Structures* and the *Drilled Piers* Project Special Provision located on the NCDOT Geotechnical Engineering Unit's website.
    - The Department will inspect drilled piers using the Shaft Inspection Device (SID) for any pours using the wet method of concrete placement and for any drilled pier excavations that cannot be visually inspected or have remained open longer than 24 hours that cannot be dewatered due to unstable soil or rock.
    - The Design-Build Team shall notify Matt Hilderbran, PE by e-mail (mrhilderbran@ncdot.gov) a minimum of five days prior to required SID testing, followed by a confirmation two days prior to required SID testing. The Design-Build Team shall notify Matt Hilderbran of all SID testing cancellations as soon as possible at the e-mail address noted above and at (919) 329-4015.
    - Install Crosshole Sonic Logging (CSL) tubes in all drilled piers. CSL test a minimum of 25% of drilled piers at each bridge or one per bent, whichever is greater. If a CSL test identifies any defect in the drilled pier, the Department has the right to request additional CSL testing and/or tomography as needed. The Department will determine which piers will be CSL tested. Submit CSL and tomography test information and results to the Geotechnical Engineering Unit, via the Design-Build Unit, for review and acceptance.
    - Drilled pier tip elevations shall not be changed during construction unless the prequalified geotechnical firm which prepares the bridge foundation design redesigns the drilled pier from either an SPT / rock core boring, performed in accordance with ASTM standards at the subject pier location, or observations of the drilled pier excavation. If a drilled pier is designed based on a boring, do not drill a boring inside an open drilled pier excavation. Locate the boring within three pier diameters of the center of the subject pier and drill to a depth of two pier diameters below the revised tip elevation. If a drilled pier is redesigned based upon observations of the drilled pier excavation, the geotechnical engineer of record shall be present during the excavation to determine the actual subsurface conditions.

- To the maximum extent practicable, on-site stormwater control measures shall be employed to minimize water quality impacts.

- Underground detention will not be allowed. No additional right of way will be acquired solely for stormwater management.

- In accordance with the *Guidelines for Drainage Studies and Hydraulics Design,* including all addenda, memos and revisions, the Design-Build Team shall prepare Outlet Analyses for the increases in discharge due to the proposed project and take appropriate action to ensure that any increases are appropriately mitigated.

- There are seven (7) existing Stormwater Control Measures (SCM) located within the project limits. Two (2) SCMs are located in the I-40 / mainline interchange. Five (5) SCMs are located in the SR 1728 (Wade Avenue) / mainline interchange. The Design-Build Team shall provide SCMs that treat the same or greater amount of runoff from the impervious surface that is treated by the existing SCMs.

Drainage Structures

Throughout this RFP, the term *drainage structures* shall include box culverts, cross pipes and storm drainage systems.

- In accordance with the *Drainage Pipe* Project Special Provision found elsewhere in this RFP, the Design-Build Team shall replace **all existing pipes** within the existing / proposed right of way of the mainline pavement reconstruction limits, including the mainline, all collector distributor roads, ramps, loops and interchange quadrants (excluding the mainline / I-40 interchange quadrants) with the appropriate pipe type. (Reference the Pavement Management Scope of Work found elsewhere in this RFP)

- Excluding areas where the existing concrete pavement is to be retained, the Design-Build Team shall replace **all existing metal pipes** within the existing / proposed right of way of the project limits with the appropriate pipe type, in accordance with the *Drainage Pipe* Project Special Provision found elsewhere in this RFP.

- Excluding drainage structures with a hydraulic conveyance greater than a single 72-inch diameter pipe, the Design-Build Team shall develop discharges for all drainage structures based upon the future build-out land use projections. The Design-Build Team shall not include the effects of storage when computing discharges for hydraulic design and analysis for areas less than 50% impervious and / or areas without storm drainage systems. For drainage areas where impervious surfaces are greater than 50% and / or areas with storm drainage systems, routing will be allowed. EPA SWMM, USACE HMS, Win TR-20, HydroCADD or equivalent are acceptable programs for routing. A storm drainage duration of 24 hours shall be used in developing the hydrograph.

- The Design-Build Team shall develop discharges for all drainage structures with a hydraulic conveyance greater than a single 72-inch diameter pipe based upon the following basin studies:

- All existing and proposed storm drainage systems shall maintain a hydraulic grade line that is a minimum of 0.5 feet below the inlet rim elevation or top of junction box; and shall adhere to all other requirements as identified in Chapter 10 of the *Guidelines for Drainage Studies and Hydraulic Design*.

- In the Technical Proposal, Volume II, the Design-Build Team shall provide a *Box Culverts and Cross Pipes Hydraulic Assessment Table* that contains the attributes noted below for all new box culverts and cross pipes 36-inches in diameter or greater:

    - Station
    - Proposed drainage structure details
    - Drainage Area
    - Percent Impervious or "C" value used
    - Discharge method used
    - Built-Out Discharges (Design Year and 100 Year)
    - FEMA Crossing (Yes / No)
    - Water Surface Elevation Natural Condition
    - Water Surface Elevation with Drainage Structure
    - HW/D for Build-out Discharges
    - Hydraulic Freeboard for Build-out Discharges
    - Comments

- While the Department prefers box culverts for conveyance of the unnamed tributaries to Brushy Creek within the SR 1012 (Western Boulevard) / I-440 interchange, and the Walnut Creek unnamed tributary in proximity to Capital Center Drive within the SR 1319 (Jones Franklin Road) / I-440 interchange, box culverts will not be required for conveyance of the aforementioned tributaries. If the Design-Build Team elects not to install box culverts for conveyance of the aforementioned unnamed tributaries, the Design-Build Team shall install pipes using trenchless construction methods. For all other cross structures greater than a 72-inch, including pipes upsized to allow for a buried inlet / outlet condition, a box culvert shall be required.

- Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall remove or fill with flowable fill all pipes not retained for drainage purposes.

- All proposed drainage boxes, including but not limited to catch basins, drop inlets and junction boxes, shall have a grate or manhole access.

- Throughout the project limits, the Design-Build Team shall analyze all drainage structures for hydraulic and structural deficiencies that are located within the existing / proposed right of way, unless required otherwise elsewhere in this RFP. Within -Y- Line construction limits, the Design-Build Team will not be required to analyze existing cross pipes that will not be lengthened if no additional discharge from the project is being generated. Using the hydraulic discharges for the future build-out land use projections and / or basins studies as appropriate, drainage structures that do not adhere to the requirements in Sections 9.5.1.3 and 9.5.2.3 of the *Guidelines for Drainage Studies and Hydraulic Design*, including all addenda, memos and revisions, and / or the freeboard and HW/D requirements noted above, shall be deemed hydraulically deficient. Based on these analyses, the following shall be adhered to:

- The Design-Build Team shall provide the appropriate hydraulic mitigation for 1) all hydraulically deficient drainage structures and 2) all hydraulically and structurally deficient drainage structures, including but not limited to replacement. For major hydraulic crossings (crossings with a conveyance greater than the capacity of a 72-inch diameter pipe), the Design-Build Team shall 1) remove all hydraulically, or hydraulically and structurally, deficient box culvert(s) and or / pipe(s), and 2) replace the aforementioned box culvert(s) and / or pipe(s) with a box culvert unless noted otherwise elsewhere in this RFP. Inlet improvements outside the right of way shall not be allowed to mitigate for hydraulically deficient box culverts and / or pipes. Based on build-out and / or basin study discharges as appropriate, the Design-Build Team shall identify all hydraulically deficient drainage structures and note their proposed mitigation in the Technical Proposal. At a minimum, in the Technical Proposal, Volume II, the Design-Build Team shall 1) identify all hydraulically deficient storm drainage systems and the proposed mitigation on the plans, and 2) provide a *Box Culverts and Cross Pipes Hydraulic Deficiency Assessment and Proposed Mitigation Table* that contains the box culvert and cross pipe attributes noted below:

    - Station
    - Existing Box Culvert / Cross Pipe Details
    - Drainage Area
    - Percent impervious or "C" value used
    - Discharge method used
    - Build-out Discharges (Design year and 100 year)
    - Hydraulically Deficient (Yes / No) for Build-out Discharges
    - Proposed Mitigation Structure(s) Details
    - HW/D for Build-out Discharges at Existing Structure without Mitigation
    - HW/D for Build-out Discharges at Existing Structure with Mitigation
    - Hydraulic Freeboard at Sag for Build-out Discharges at Existing Structure without Mitigation
    - Hydraulic Freeboard at Sag for Build-out Discharges at Existing Structure with Mitigation
    - HW/D for Build-out Discharges for Mitigation Structure(s)
    - Hydraulic freeboard at Sag for Build-out Discharges at Mitigation Structure(s)
    - Comments

- To ensure that all drainage structures being retained are structurally sound, the Design-Build Team shall provide appropriate documentation obtained from video inspections for the Department's review and approval prior to any hydraulic design submittal. Prior to performing any storm drain clean-out required for the aforementioned video inspections, the Design-Build Team shall obtain approval from the Engineer. In accordance with Subarticle 104-8(A) of the 2018 NCDOT *Standard Specifications for Roads and Structures*, required storm drain clean-out will be paid for as extra work.

ITS SCOPE OF WORK (6-14-18)

GENERAL

Design, furnish, and install new ITS devices and communications cable system near and along the project. Relocate ITS devices impacted by the construction of this project. Interconnect the new fiber optic communications cables with existing fiber optic communications cable. Integrate the new, replaced and relocated CCTV and new DMS devices into the existing computer and network hardware and software at the NCDOT Triangle Regional Transportation Management Center (TRTMC) located at 1636 Gold Star Drive, Raleigh, NC 27607. Major items of work include, but are not limited to, the following:

- Nine (9) New Closed Circuit Television Cameras (CCTV)
- Remove, stockpile and reinstall two (2) existing High Definition Cameras (HD)
- Two (2) New Dynamic Message Signs (DMS) on pedestal mount structures
- Conduit System (two – 2-inch conduits for communication and two – 2-inch conduit for electrical)
- Approximately four (4) miles of 144 fiber single-mode fiber optic communications cable with tracer wire
- Fiber optic drop cable assemblies with tracer wire
- Junction boxes
- Splice enclosures
- Electrical service equipment
- Local Area Network equipment

Furnish and install guardrail to protect the ITS devices, as required.

Determine the location of each ITS device, obtain the Engineer's approval of the locations, install and implement test procedures, and integrate the devices with the TRTMC.

Prior to any underground work, locate existing utilities, communications cable, power cable, and adjust work activities to protect these facilities. Immediately cease work and notify the Engineer and the affected owners if damage to existing utilities occurs. Repair damages to existing utilities, communications cable, and / or power cable at no cost to the Department.

Perform all work in accordance with the *Dynamic Message Sign* and *High Definition CCTV Wood Pole and Field Equipment* Project Special Provisions found elsewhere in this RFP, the 2018 NCDOT *Standard Specifications for Roads and Structures* and the 2018 NCDOT *Roadway Standard Drawings.*

Refer to the Traffic Signals and Signal Communications Scope of Work for additional ITS and fiber optic communications requirements.

Ethernet equipment and Video Processing equipment. Furnish managed Ethernet routing switches and edge switches that provide Ethernet connectivity at transmission rates of 1000 megabits per second from each ITS device to the TRTMC.

Splice the new 144-fiber cable into the existing fiber optic communications cable at existing splice enclosures located at the I-40 and I-440 interchange in Cary, NC and the I-40 at Wade Avenue interchange in Raleigh, NC. The Design-Build Team shall generate splice plans and migration details for interfering with existing fiber for the Department's review and approval prior to beginning construction.

Relocate or replace existing fiber optic cable impacted by the construction of these projects. Potential impacts of existing NCDOT fiber optic cable are at four locations within the project limits:

- US 1 and I-440 from Walnut Street to Athens Drive (48-fiber, 24-fiber, and drop cables to CCTVs)
- I-40 at I-440 Interchange (144-fiber, 48-fiber, 24-fiber, and drop cables to CCTVs)
- I-40 at Wade Avenue Interchange (96-fiber and a drop cable to CCTV)
- Blue Ridge Road from Trinity Road to Hillsborough Street (48-fiber and drop cables to CCTVs)

Remove existing communications equipment including, but not limited to transceivers, media converters, encoders, decoders, spread spectrum radios, repeaters, antennas, abandoned repeater wood poles, and electrical services. Deliver removed equipment to the Regional ITS Engineer at 1636 Gold Star Drive, Raleigh, NC.

Prior to beginning construction within the North Carolina Railway Company (NCRR) right of way, the Design-Build Team shall adhere to all the NCRR requirements. (Reference the *Requirements for Cables Crossing Railroads* Project Special Provision found elsewhere in this RFP)

CCTV CAMERAS

The Design-Build Team shall strategically locate and install two (2) new CCTV cameras on 60' wood poles at the locations that provide optimum viewing as defined in the *High Definition CCTV Wood Pole and Field Equipment* Project Special Provision found elsewhere in this RFP.

Install one CCTV camera at each of the following locations:

- I-440 at Melbourne Road (Exit 1D)
- I-440 near mile marker 3
- ** NOTE ** Deleted bullet for NC 54 (Hillsborough Street) at Blue Ridge Road

Determine the exact location of each CCTV camera, obtain the Engineer's written approval of the locations, and install the cameras. All components required for the CCTV installations shall be new. Furnish site surveys, including but not limited to bucket truck surveys, to ensure camera coverage areas are acceptable.

Install new electrical service equipment at all new CCTV locations. Furnish and install new equipment cabinets as defined in the *High Definition CCTV Wood Pole and Field Equipment* Project Special Provision found elsewhere in this RFP. Comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC), the Standard Specifications, the Project Special Provisions, and all local ordinances. All work involving electrical service shall be coordinated with the appropriate utility company and the Engineer.

The Design-Build Team shall replace seven (7) existing analog CCTV cameras with High Definition CCTV cameras on existing metal or wood poles as defined in the *High Definition CCTV Wood Pole and Field Equipment* Project Special Provision found elsewhere in this RFP. Furnish and install new equipment cabinets as defined in the *High Definition CCTV Wood Pole and Field Equipment* Project Special Provision found elsewhere in this RFP.

Replace existing analog CCTV cameras at each of the following locations:

- US-1 at Walnut Street (Exit 101)
- I-40 at I-440 (Exit 293)
- I-440 at Athens Drive Overpass (Between Mile Markers 1 & 2)
- I-440 at Western Boulevard East Bound (Exit 2)
- I-440 at Western Boulevard West Bound (Exit 2)
- I-440 at Hillsborough Street (Exit 3)
- I-440 at Wade Avenue (Exit 4)

Relocate existing CCTV poles and associated electrical equipment impacted by the construction of these projects as needed.

Furnish and install new equipment cabinets as defined in the *High Definition CCTV Wood Pole and Field Equipment* Project Special Provision found elsewhere in this RFP. All components required for the CCTV replacements shall be new.

Deliver all removed or replaced CCTV field equipment and cabinets to the Regional ITS Engineer at 1636 Gold Star Drive, Raleigh, NC.

Remove, stockpile and reinstall existing HD Cameras, cabinets, with related communications equipment, wood poles, and electrical services at each of the following locations:

- Blue Ridge Road at Hillsborough Street
- Blue Ridge Road at Trinity Road

NEW DMS

The Design-Build Team shall strategically locate and install two (2) new pedestal mount DMSs. Furnish and install new DMS and associated equipment as defined in the *Dynamic Message Sign* Project Special Provision found elsewhere in this RFP.

Install one DMS at each of the following locations:

- I-440 west bound shoulder in advance of I-40 (Exit 1A & 1B)
- I-440 east bound shoulder in advance of Western Boulevard (Exit 2)

The DMSs installed under this project shall be selected from the most current version of the NCDOT ITS & Signals Qualified Products List.

Determine the exact location of the DMSs by coordinating with the Engineer. Obtain the Engineer's written approval of the locations and install the DMSs.

Install new electrical service equipment at all new DMS locations. Comply with the National Electrical Code (NEC), the National Electrical Safety Code (NESC), the Standard Specifications, the Project Special Provisions, and all local ordinances. All work involving electrical service shall be coordinated with the appropriate utility company and the Engineer.

MATERIALS & CONSTRUCTION

Furnish and install new materials and hardware that meet the requirements of the 2018 *NCDOT Standard Specifications for Roads and Structures* and this Scope of Work.

CCTV CAMERAS

Install each CCTV camera on a 60-foot Class III wood pole. Install CCTV equipment in a 336S equipment cabinet mounted on the pole. Install the following minimum equipment in each CCTV equipment cabinet:

- Power equipment including power supplies, circuit breakers, surge protectors, and other related materials.

Prior to any underground work, locate existing utilities, communications cable, power cable, and adjust work activities to protect these facilities. Immediately cease work and notify the Engineer and the affected owners if damage to existing utilities occurs. Repair damages to existing utilities, communications cable, and / or power cable at no cost to the Department.

Perform all work in accordance with the *High Definition CCTV Wood Pole and Field Equipment* Project Special Provision found elsewhere in this RFP, the 2018 NCDOT *Standard Specifications for Roads and Structures* and the 2018 NCDOT *Roadway Standard Drawings.*

Replace each existing analog CCTV camera on an existing metal or wood pole. Install CCTV equipment in a 336S equipment cabinet mounted on the pole. Install the following minimum equipment in each CCTV equipment cabinet:

- Power equipment including power supplies, circuit breakers, surge protectors, and other related materials.

Prior to any underground work, locate existing utilities, communications cable, power cable, and adjust work activities to protect these facilities. Immediately cease work and notify the Engineer and the affected owners if damage to existing utilities occurs. Repair damages to existing utilities, communications cable, and / or power cable at no cost to the Department.

Perform all work in accordance with the *High Definition CCTV Wood Pole and Field Equipment* Project Special Provision found elsewhere in this RFP, the 2018 NCDOT *Standard Specifications for Roads and Structures* and the 2018 NCDOT *Roadway Standard Drawings.*

PAVEMENT MANAGEMENT SCOPE OF WORK (5-1-18)

CONCRETE WIDENING SECTION

In the southern portion of the mainline southbound construction limits (from approximately Station 124+55 -L1- to Station 191+00 -L1- * of the Preliminary Roadway Plans provided by the Department), the existing concrete pavement constructed in 2006 shall be retained and concrete widening shall be performed in the areas as indicated elsewhere in this RFP. Outside the limits of the widened concrete areas, the existing concrete shoulders that will not be used as travel lanes may remain in place, unless the Design-Build Team determines that their removal and replacement is required for temporary maintenance of traffic. For the travel lanes and shoulders within the limits of the widened concrete areas defined above, the Design-Build Team shall remove and dispose of / recycle the existing mainline concrete shoulders to the top of the soil subgrade; and perform concrete travel lane widening using the following pavement design:

* Note: The Design-Build Team shall determine the exact northern terminus of the southbound mainline concrete widening which shall be the existing pavement joint between the concrete pavement constructed in 2006 and the concrete pavement constructed in 1962.

Mainline Travel Lane Concrete Widening Pavement Design

11.0” doweled jointed concrete
2.0” of PADC Type P-78M
1.25” of S9.5B
12” Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

The Design Build Team shall design and construct either concrete or asphalt shoulders adjacent to the areas of widened concrete travel lanes using one of the following options:

Mainline Full-Depth Median Shoulder and Outside Shoulder Pavement Design - Concrete Shoulder Option

11.0” jointed concrete (without dowels)
12” Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

The transverse joints shall be uniformly spaced 15 feet apart.

Mainline Full-Depth Median Shoulder and Outside Shoulder Pavement Design - Asphalt Shoulder Option **

3.0" S9.5C
4.0" I19.0C
5.0" B25.0C
12" Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

** Note: The required width of the outside travel lane widening shall be increased by 1.0' if asphalt shoulders are constructed.

In accordance with the *Diamond Grinding Concrete Pavement* Project Special Provision found elsewhere in this RFP, the Design-Build Team shall diamond grind the new concrete in the widened areas. An overlay will not be required on either the new or existing concrete in the aforementioned mentioned station range. The Design-Build Team shall include new shoulder drains in the widened areas and tie existing drainage structures to proposed drainage structures, as required, to ensure drainage of the entire pavement structure. The shoulder drain design and outlet locations for the widened areas shall be submitted to the Design-Build Unit for review and acceptance.

ALTERNATE PAVEMENT DESIGNS

From the pavement joint described above for southbound and from approximately Station 224+50 -L1- for northbound to the southern limits of the mainline bridges over Wade Avenue, the Design-Build Team shall remove and dispose of / recycle the existing concrete pavement for the mainline travel lanes, mainline median shoulders and mainline outside shoulders to the top of the soil subgrade; and construct new pavement in accordance with one of the pavement alternates below.

Unless noted otherwise elsewhere in this RFP, the pavement design for the mainline travel lanes, the mainline median shoulders and the mainline outside shoulders shall consist of one of the following alternates throughout the project limits. The Design-Build Team shall specify the pavement alternate chosen in the Technical Proposal.

ALTERNATE 1 – CONCRETE PAVEMENT (CONCRETE SHOULDERS)

Mainline Travel Lane Pavement Design

The pavement design for the mainline travel lanes shall consist of the following:

13.5" doweled jointed concrete
Nonwoven Geotextile Drainage Interlayer *
1.25" S9.5B
12" Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

* The Nonwoven Geotextile Drainage Layer shall be in accordance with the *Nonwoven Geotextile Interlayer* Project Special Provision found elsewhere in this RFP. The Nonwoven Geotextile Drainage Interlayer shall extend to the shoulder drains.

For each direction of travel, the mainline concrete pavement structure shall be 36 feet wide.

In accordance with the *Diamond Grinding Concrete Pavement* Project Special Provision found elsewhere in this RFP, the Design-Build Team shall diamond grind the new concrete pavement.

Mainline Full-Depth Median Shoulder and Outside Shoulder Pavement Design

The pavement design for the mainline median paved shoulder and the mainline outside paved shoulder shall consist of the following:

13.5" jointed concrete (without dowels)
1.25" S9.5B
12" Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

The transverse joints shall be uniformly spaced 15 feet apart.

ALTERNATE 2 – CONCRETE PAVEMENT (ASPHALT SHOULDERS)

Mainline Travel Lane Pavement Design

The pavement design for the mainline travel lanes shall consist of the following:

13.5" doweled jointed concrete
Nonwoven Geotextile Drainage Interlayer *
1.25" S9.5B
12" Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

* The Nonwoven Geotextile Drainage Layer shall be in accordance with the *Nonwoven Geotextile Interlayer* Project Special Provision found elsewhere in this RFP. The Nonwoven Geotextile Drainage Interlayer and the S9.5B layer shall extend to the shoulder drains.

For each direction of travel, the mainline concrete pavement structure shall be 37 feet wide, with one foot located within the mainline outside paved shoulder. The transverse joints shall be uniformly spaced 15 feet apart.

In accordance with the *Diamond Grinding Concrete Pavement* Project Special Provision found elsewhere in this RFP, the Design-Build Team shall diamond grind the new concrete pavement.

Mainline Full-Depth Median Shoulder and Outside Shoulder Pavement Design

The pavement design for the mainline median paved shoulder and the mainline outside paved shoulder shall consist of the following:

3.0" S9.5C
4.0" I19.0C
6.5" B25.0C
12" Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

ALTERNATE 3 – ASPHALT PAVEMENT (FULL-DEPTH ASPHALT)

Mainline Travel Lane Pavement Design

The pavement design for the mainline travel lanes shall consist of the following:

3.0" S9.5D
4.0" I19.0C
10.0" B25.0C
12" Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

Mainline Full-Depth Median Shoulder and Outside Shoulder Pavement Design

The pavement design for the mainline median paved shoulder and mainline outside paved shoulder shall consist of the following:

3.0" S9.5C
4.0" I19.0C
7.75" B25.0C
12" Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

ALTERNATE 4 – ASPHALT PAVEMENT (AGGREGATE BASE COURSE)

Mainline Travel Lane Pavement Design

The pavement design for the mainline travel lanes shall consist of the following:

3.0” S9.5D
4.0” I19.0C
5.5” B25.0C
10.0” ABC
12” Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

Mainline Full-Depth Median Shoulder and Outside Shoulder Pavement Design

The pavement design for the mainline median paved shoulder and mainline outside paved shoulder shall consist of the following:

3.0” S9.5C
4.0” I19.0C
3.0” B25.0C
9.5” ABC
12” Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

ALTERNATE 5 – ASPHALT PAVEMENT (CEMENT TREATED AGGREGATE BASE COURSE)

Mainline Travel Lane Pavement Design

The pavement design for the mainline travel lanes shall consist of the following:

3.0” S9.5D
4.0” I19.0C
4.0” B25C
8.0” CTABC
12” Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

Mainline Full-Depth Median Shoulder and Outside Shoulder Pavement Design

The pavement design for the mainline median paved shoulder and mainline outside paved shoulder shall consist of the following:

3.0" S9.5C
4.0" I19.0C
4.0" B25.0C
8.0" ABC
12" Type 1 Aggregate Subgrade (*Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

OTHER MAINLINE PAVING REQUIRMENTS

From the northern limits of the mainline bridges over Wade Avenue to the northern terminus of the existing concrete pavement in proximity to the existing pedestrian bridge within the I-440 / Wade Avenue Interchange, the Design-Build Team shall remove the existing concrete pavement and replace with Alternate 3 found elsewhere in this RFP. The Design-Build Team shall be responsible for determining the exact northern terminus of the existing concrete pavement in proximity to the aforementioned existing pedestrian bridge.

From the aforementioned northern terminus of the existing concrete pavement in proximity to the existing pedestrian bridge within the I-440 / Wade Avenue interchange to the southern limits of the existing mainline bridges over Lake Boone Trail, the Design-Build Team shall uniformly mill the existing mainline pavement 1.5" and replace with 1.5" S9.5D.

OTHER REQUIREMENTS

Unless noted otherwise elsewhere in this RFP, all longitudinal joints shall be located on a lane line or lane midpoint. Solely to shift a longitudinal joint to one of the aforementioned locations, a maximum 840-foot transition, that locates the longitudinal joint elsewhere, will be allowed. The Design-Build Team shall indicate in the Technical Proposal how longitudinal joints will be located on a lane line or lane midpoint.

The subgrade stabilization shown in **Table 1** below shall consist of 12" Type 1 Aggregate Subgrade (Reference the *Aggregate Subgrade* Standard Special Provision found elsewhere in this RFP)

Cement treated base course shall be in accordance with the *Cement Treated Base Course* Project Special Provision found elsewhere in this RFP.

From north of the US 1 / I-440 / I-40 interchange to the I-440 / Lake Boone Trail interchange, and from west of the I-440 / Wade Avenue interchange to the Wade Avenue / Blue Ridge Road interchange, the Design-Build Team shall design and construct the proposed mainline ramps / loops, -Y- Lines, and service roads, including all required widening, utilizing the U-2719 pavement designs listed in **Table 1** below:

Throughout the Wade Avenue / Blue Ridge Road interchange ramps (-Y36RA- and -Y36RD-) construction limits, the Design-Build Team shall resurface the existing pavement with a minimum 3.0" S9.5C to tie-in the existing ramps to the proposed mainline pavement. (Reference the Roadway Scope of Work found elsewhere in this RFP)

The Design-Build Team shall resurface or mill and fill the entire length of Pylon Drive. At a minimum, the Design-Build Team shall resurface Pylon Drive with a minimum 3.0" S9.5B throughout the construction limits of the widened sections. Outside the limits of the widened sections, the Design-Build Team will be allowed to uniformly mill the existing pavement 1.5" and uniformly overlay with 1.5" S9.5B if the existing Pylon Drive curb and gutter can be retained, in the Department's sole discretion. (Reference the Roadway Scope of Work found elsewhere in this RFP)

Throughout the Trinity Road construction limits, the Design-Build Team shall uniformly mill the existing pavement 3.0" and resurface with a minimum 3.0" S9.5B. (Reference the Roadway Scope of Work found elsewhere in this RFP)

Throughout the Blue Ridge Road construction limits where the existing pavement will be retained, the Design-Build Team shall uniformly mill the pavement 3.0" and resurface with a minimum 3.0" S9.5B. (Reference the Roadway Scope of Work found elsewhere in this RFP)

Throughout the Hillsborough Street construction limits where the existing pavement will be retained, the Design-Build Team shall uniformly mill the existing pavement 2.5", replace with 2.5" I19.0C, and resurface with a minimum 3.0" S9.5B. (Reference the Roadway Scope of Work found elsewhere in this RFP)

Throughout the Jones Franklin Road construction limits where the existing pavement will be retained, the Design-Build Team shall uniformly mill the existing pavement 2.5", replace with 2.5" I19.0C, and resurface with a minimum 3.0" S9.5B. (Reference the Roadway Scope of Work found elsewhere in this RFP)

Throughout the Western Boulevard construction limits where the existing pavement will be retained, the Design-Build Team shall uniformly mill the existing pavement 3.0" and resurface with a minimum 3.0" S9.5B unless noted otherwise elsewhere in this RFP. (Reference the Roadway Scope of Work found elsewhere in this RFP)

Throughout the Beryl Road construction limits, the Design-Build Team shall uniformly mill the existing pavement 4.0" and uniformly overlay with 2.5" I19.0C and 1.5" S9.5B.

For all greenways, the pavement design shall consist of 2.0" of S9.5B, 6.0" of ABC and a Soil Stabilization Geotextile Fabric. Construction of all greenways shall be consistent with the *Greenways and Multi-Use Paths* Project Special Provision found elsewhere in this RFP.

For areas of existing concrete pavement that have been overlaid with an ultra-thin bonded wearing course by others (Design-Build Team did not install the overlay) and require a traffic

- Organizing public meetings, including venue selection, reservation and fee
- Excluding colored maps, developing and producing informational print materials for all meetings and workshops
- Soliciting and administering advertisements, as deemed necessary
- Mailings to the identified target audiences, including postage
- If necessary, developing and producing informational print materials for Limited English Proficiency (LEP) outreach
- Web page updates related to public involvement efforts

To ensure that project information can be distributed to the public using standard methods, including but not limited to notices to newspapers, the Design-Build Team shall coordinate with the Public Involvement Officer assigned to the project.

The Design-Build Team shall also coordinate with the Public Involvement Officer to promote public awareness for this project. The amount of public involvement required for this project shall be directly based on the Design-Build Team's Transportation Management Plans and construction details. The Design-Build Team's responsibilities shall include, but are not limited to, the following:

- Providing information requested by the Department to develop and produce informational printed materials for all meetings and workshops
- Developing and providing colored maps for presentation at all public meetings / workshops
- Providing details surrounding the impacts to the public
- Providing advance notice to the Department of upcoming project impacts
- Assisting the Department in the development of the target audience list
- At a minimum, the Design-Build Team shall attend and speak at a Public Information Meeting and at a Local Government Officials Meeting during development of the preliminary design. The aforementioned Meetings shall occur prior to the Concurrence Point 4B Meeting and cover the entire project. (Reference the Environmental and Hydraulics Scopes of Work found elsewhere in this RFP) The Design-Build Team shall attend and speak at other public meetings / workshops as required herein.
- Hand delivery of time sensitive informational materials

The minimum public involvement requirements solely associated with the Transportation Management Plans shall include, but are not limited to the following:

- Public Meetings – If Beginning of Construction meeting for area businesses and residents is held, attending and / or speaking at this event.

- Distribution of Informational Materials - For beginning of construction and for all road closures with detour routes, the Design-Build Team shall be responsible for providing time sensitive informational material, provided by the Department, directly to the target audiences. If the Design-Build Team informs the Department of the aforementioned activities less than thirty (30) calendar days in advance, the Design-Build Team shall hand deliver the materials to the impacted target audiences.

Public Information

Unless noted otherwise elsewhere in this RFP, the NCDOT Communications Office will be responsible for the activities noted below:

RAILROAD COORDINATION SCOPE OF WORK (6-15-18)

For Project U-4437, the Design-Build Team shall be responsible for coordinating with Norfolk Southern Railway (NSR), North Carolina Railroad Company (NCRR), and CSX Transportation (CSXT) (Railroad Owners / Operators, and collectively referred to as the "Railroads") to secure the railroad agreements necessary for the construction of the new railroad bridges over Blue Ridge Road, including the detour and permanent railroad tracks, on-site roadway detour including temporary at-grade crossing, and temporary and permanent passenger platforms based on their design and / or construction methods. The Design-Build Team shall be responsible for coordination of all design and construction details on NCRR's right of way and shall include any necessary agreements required by the North Carolina Department of Transportation (NCDOT) and / or the Railroads.

For Project U-2719, the Design-Build Team shall be responsible for coordinating with NSR, NCRR, and CSXT (Railroad Owners / Operators, and collectively referred to as the "Railroads") to secure the railroad agreements necessary for the construction of the new overhead highway bridges carrying the mainline over the Railroads, including the demolition of the existing overhead mainline bridges based on their design and / or construction methods. The Design-Build Team shall be responsible for coordination of all design and construction details on NCRR's right of way and shall include any necessary agreements required by the North Carolina Department of Transportation (NCDOT) and / or the Railroads.

NCDOT will be responsible for some Railroad costs associated with these projects including Preliminary Engineering (PE) pursuant to current PE Agreements and all construction performed by the Railroads and / or their contractors, including but not limited to materials.

The Design-Build Team shall be responsible for all other Railroad costs associated with these projects, including all Railroad construction performed by the Design-Build Team, required insurances, Railroad flagging and construction observers, Railroad Construction Engineering and Railroad submittal reviews pursuant to the Construction Agreements.

The Design-Build Team shall be responsible for all construction required except the detour track construction, permanent track construction, and grade crossing surfaces, including but not limited to grade crossing signals, gates, and any related train control signals / communicatins systems, which will be completed by the Railroads using Railroad provided materials. The Railroads will not incur cost, and the Design Build Team shall not enter into or onto the NCRR rail corridor until a Right of Entry Agreement has been executed, insurance requirements are met, and the Railroads receive written authorization to incur cost. A separate Right of Entry Agreement shall be required for entry onto the CSXT track or onto the land controlled by CSXT, defined as from the common centerline of the two main tracks to 25' north of the CSXT track.

siding track. The railroad right of way width for this area is 200 feet wide, centered 100 feet on each side of the common existing main track centerline.

All bridges constructed over the Railroads shall span the three existing tracks, provide horizontal clearance for future tracks on both outsides of the existing tracks and provide 25' clearance from the outside future tracks to the nearest horizontal obstruction (typically a bridge pier). The horizontal clearance for the future tracks shall assume tracks are constructed on 15' minimum track centers to allow for compensation for curvature. Adding in the additional 25' of clearance outside the future tracks results in a minimum clear span length of 110'. A minimum vertical clearance of 24'-3" shall be provided over the tracks, to a point extending six feet outside of the future outer tracks, which are assumed to be at the same elevation to the main track adjacent to it.

Project Operation Requirements

To provide service for the Fair Stop, the Design-Build Team shall design and construct both temporary and permanent low-level passenger platforms as shown in the roll plots dated 2018-05-08 provided by the Department, including but not limited to provisions for a safe and efficient route to the Fairgrounds from the platform. The temporary passenger platform shall be asphalt with dimensions and general location as shown on the aforementioned roll plot. The permanent passenger platform shall be concrete with dimensions and general location as shown on the aforementioned roll plot. The temporary and permanent passenger platforms shall be eight inches above the top of rail (ATR), and shall be designed and constructed in accordance with Amtrak platform standards. The removal of the section of Blue Ridge Road currently used as the Fair Stop platform, the temporary platform construction, and the permanent platform construction have the following ICT's that require a platform adjacent to the active temporary / permanent northern track during the entire month of October of every year.

The current Fair Stop platform is provided by utilizing existing Blue Ridge Road when trains stop over the railroad crossing to board and unload passengers. During the entire month of October in every year, the Fair Stop platform must be continually provided on the north (Fairground) side of the railroad crossing, adjacent to the active northern temporary / permanent track. Since there are numerous construction activities that must occur to maintain this passenger service, and since the required activities include track construction by others, the Design-Build Team shall carefully plan and coordinate with the North Carolina Railroad Company, Norfolk Southern Railway, and CSXT (the Railroads) to ensure the Fair Stop passenger platform is operational during the entire month of October of every year.

I. Intermediate Contract Time # 22 for Failure to Remove the Blue Ridge Road Fair Stop Passenger Platform and Construct a Temporary Fair Stop Platform

The Design-Build Team shall remove the existing Blue Ridge Road pavement currently used as a passenger platform for the Fair Stop. The removal of the

by the Railroads, shall be completed and the permanent Fair Stop passenger platform operational by September 30th of the following year.

The completion of the work required for Intermediate Contract Time (ICT) #23 shall be defined as 1) the completion and acceptance of the railroad bridges, 2) the completion and acceptance of the permanent track grading work, 3) the completion of the permanent track construction, 4) the permanent tracks placed into service by the Railroads, 5) the completion of the detour track removal to the extent required to construct the permanent Fair Stop passenger platform, 5) the completion of the permanent Fair Stop passenger platform construction, and 6) the acceptance of the permanent Fair Stop passenger platform by the Railroads. The Design-Build Team shall give the Railroads a minimum of 180 days written notice that the railroad bridges will be completed and all roadbed grading work will be ready for the permanent track construction, and provide monthly written updates. The Design-Build Team shall allow a minimum of 180 days for the Railroads to construct the permanent tracks, including but not limited to track cut-ins. The Design-Build Team shall only begin construction of the permanent Fair Stop passenger platform upon completion of the railroad permanent track construction.

The Date of Availability for Intermediate Contract Time #23 shall be November 1st of the year proposed by the Design-Build Team in the Technical Proposal. The Design-Build Team shall provide the Engineer a minimum of 45 days written notice prior to the Date of Availability for ICT #23. The Completion Date for ICT #23 shall be the date proposed by the Design-Build Team in the Technical Proposal, and such date shall not be later than September 30th of the year following the ICT #23 Date of Availability.

Liquidated Damages for Intermediate Contract Time #23 for failure to remove the temporary Fair Stop passenger platform, and complete the permanent Fair Stop passenger platform by the ICT #23 Completion Date specified in the Technical Proposal shall be $25,000.00 per calendar day or any portion thereof.

Arrangements for Protection and Adjustments to Existing and Proposed Railroad Crossing Surface and Roadbeds

I. The Design-Build Team shall make the necessary arrangements with the Railroads for the installation of temporary grade crossing surfaces, including but not limited to associated temporary drainage, removal of temporary construction crossings after completion of project, shoring plans, railroad force account estimates and agreements. The temporary grade crossing surface shall conform to NSR and CSXT standards. All crossing surfaces, including but not limited to all grade crossing signals, gates, and any related train control signals / communications systems, shall be procured, installed and removed by the Railroads, or their representative, at the Department's expense.

SPECRAIL	AMERISTAR	Ultra Aluminum Mfg., Inc.
Saybrook	AEGIS Plus Majestic 3-Rail	UAF 200 Flat Top

Proposed bridge rails on NSR and CSXT shall be in accordance with the NSR and CSXT track design standards.

The surface of all retaining walls on Ligon Street shall have surface treatment equivalent to the sound barrier walls. (Reference the *Architectural Concrete Surface Treatment* Project Special Provision found elsewhere in this RFP)

Retaining walls facing the NC Museum of Art shall have a Fractured Fin pattern on the exposed face. The specific pattern(s) and stain requirements will be coordinated post Award. Excluding the pattern and stain details, the Design-Build Team shall design and construct the retaining wall surface treatments in accordance with the *Architectural Concrete Surface Treatment* Project Special Provision found elsewhere in this RFP.

Retaining walls facing Meredith College and / or the greenway shall have a stone pattern and coloring on the exposed face that matches the existing retaining walls along the greenway north of Wade Avenue. The Design-Build Team shall design and construct the retaining wall surface treatments in accordance with the *Architectural Concrete Surface Treatment* Project Special Provision found elsewhere in this RFP.

Excluding any retaining walls constructed within the NCRR right of way or vertical abutment walls, the retaining walls along SR 1664 (Blue Ridge Road) shall be designed and constructed as noted below:

- The walls located between SR 1664 (Blue Ridge Road) and an elevated sidewalk shall be a standard smooth finish concrete.
- From the top of the sidewalk to the top of the wall, the wall shall be brick. The brick shall be whole brick, match the appearance of the brick used on the North Carolina State University College of Veterinary Medicine buildings, and be approved by the Engineer prior to installation.
- Throughout the limits of the brick wall that is greater than 13-foot tall, the Design-Build Team shall provide art window insets for future artwork. The art windows shall be eight feet tall, five feet wide, four-inches deep and have a circular arched top and sloped brick ledge at the bottom. Three art windows shall be equally spaced between each brick pilaster. The interior surface of the art windows shall be smooth concrete suitable for tile installation. The bottom of the art windows shall be located 2.5 feet from the top of the sidewalk.
- Throughout the limits of the brick wall, the Design-Build Team shall design and construct continuous two-foot wide, brick pilasters in accordance with the requirements noted below:
    - The Design-Build Team shall uniformly space the brick pilasters.
    - Excluding the sections of the brick wall directly beneath a bridge, all brick pilasters shall be spaced approximately 30 feet apart.
    - The Design-Build Team shall design and construct a brick pilaster at the edges of the Hillsborough Street bridge.
    - The Design-Build Team shall design and construct a brick pilaster at the ends of the brick walls.
- The top of the brick retaining wall shall be stepped no more than one-foot per ten-foot run of wall.

Sound Barrier Walls

The Design-Build Team shall design and construct all sound barrier walls required by the Design-Build Team's design. (Reference the Roadway Scope of Work found elsewhere in this RFP)

Regardless of wall height, sound barrier walls shall be designed in accordance with the latest edition of the AASHTO *LRFD Bridge Design Specifications* with a minimum base wind pressure of 40 psf.

Excluding sound barrier walls at Method Park, all proposed sound barrier wall surfaces shall have equivalent surface treatment. (Reference the *Architectural Concrete Surface Treatment* Project Special Provisions found elsewhere in this RFP)

Sound barrier walls at Method Park shall have a custom surface treatment that depicts historic structures from the Method Community that alternates with a brick pattern. The custom surface treatment, brick pattern and stain requirements will be coordinated post Award. Excluding the pattern and stain details, the Design-Build Team shall design and construct the sound barrier wall surface treatment in accordance with the *Architectural Concrete Surface Treatment* Project Special Provision found elsewhere in this RFP.

All existing sound barrier walls that require relocation, extension and / or modification shall be designed and constructed with the same materials as the existing wall, and color and style that matches the existing wall.

All ground mounted sound barrier walls shall be detailed in accordance with Structure Standard Drawings SBW1 and SBW2, and concrete piles shall be used. (Reference the *Sound Barrier Wall* and *Architectural Concrete Surface Treatment* Project Special Provisions, and the Roadway Scope of Work found elsewhere in this RFP)

Unless otherwise approved by the Department, the top of the noise wall shall be constructed to provide a continuous elevation transition in increments no greater than one- foot.

General

The Design-Build Team's primary design firm shall be on the Department's list of firms qualified for structure design and maintain an office in North Carolina.

Excepted as allowed otherwise elsewhere in this RFP, designs shall be in accordance with the latest edition of the *AASHTO LRFD Bridge Design Specifications* (with exceptions noted in the NCDOT *Structures Management Unit Manual*), NCDOT *LRFD Driven Pile Foundation Design Policy*, NCDOT *Structures Management Unit Manual* (including Policy Memos) and NCDOT *Bridge Policy Manual.*

Use of Florida Department of Transportation Prestressed Florida I-Beams (FIB), the Prestressed Concrete Committee for Economic Fabrication (PCEF) prestressed concrete girders, and Modified Bulb Tee girders will be allowed. However, the structural details associated with the

Prior to incorporation, obtain written approval from the Engineer for all road and / or access point closures.

Prior to incorporation, all offsite detour routes shall receive Department written approval and shall adhere to the following requirements:

- Except as allowed in ICT #1, ICT #6 - ICT #17, and ICT #21 found elsewhere in this RFP, all roads, including ramps and loops, shall not be closed.

- Except as allowed otherwise elsewhere in this RFP, the Design-Build Team shall not permanently close any existing ramp / loop until 1) the temporary or proposed ramp / loop that will carry the corresponding traffic is open to traffic and fully operational; and 2) any temporary or proposed traffic signal at the temporary or proposed ramp / loop terminal for the corresponding traffic is operational.

- Except as allowed otherwise in ICT #2, ICT #6, ICT #10 and ICT #21, the Design-Build Team may modify the existing Western Boulevard / mainline interchange by installing long-term closures on the existing ramps / loops, provided that the traffic movements for the closed ramps / loops are maintained elsewhere within the interchange. The Design-Build Team may also make the following changes on Western Boulevard to mitigate the effects of closing the ramps / loops – 1) modify the existing lane configuration, 2) install temporary turn lanes, and / or 3) install temporary traffic signals. Traffic queueing on the existing and temporary Western Boulevard ramps / loops shall not extend to the mainline at any time. During off-peak hours, traffic queueing on Western Boulevard shall not extend from the ramp terminals to the adjacent traffic signals; and all movements at all ramp / loop terminals shall operate at a Level of Service “D” or better during the off-peak hours.

- At the beginning of construction, the Design-Build Team shall close the I-440 westbound to Wade Avenue eastbound loop and provide a Department approved off-site detour until the proposed final replacement movement is open to traffic and fully operational.

- The Design-Build Team shall not concurrently close adjacent -Y- Lines.

- The Design-Build Team shall not concurrently close -Y- Lines with overlapping detours.

- The Design-Build Team shall not close Athens Drive during the B-5130 Project Avent Ferry Road closure.

- The Design-Build shall not concurrently close Melbourne Road and the Melbourne Road interchange ramps.

F. Road Closure Notice (RCN)

Proposed road closures on any road shall be approved by the Engineer prior to incorporation in the TMP.

The Design-Build Team shall issue a Road Closure Notice (RCN) to NCDOT and affected government entities a minimum of thirty (30) calendar days prior to the publication of any notices or placement of any traffic control devices associated with road closures, detour routing or other change in traffic control requiring road closures.

For a RCN utilizing a non-NCDOT controlled facility, the Design-Build Team shall secure concurrence in writing from the controlling government entity. A RCN shall contain the estimated date, time, duration, and location of the proposed work. The Design-Build Team shall keep NCDOT and any other affected government entity informed of any and all changes or cancellations of proposed Road Closures prior to the date of their implementation.

If an emergency condition should occur, a RCN shall be provided to NCDOT within two (2) days after the event. For non-NCDOT controlled facilities, the Design-Build Team shall immediately notify the controlling government entity.

II. Project Operations Requirements

The following are Time Restrictions and notes that shall be included with the Transportation Management Plan General Notes, unless noted otherwise elsewhere in this RFP:

A. Time Restrictions

1. Intermediate Contract Times #2 through #5 for Lane Narrowing, Lane Closure, Holiday and Special Event Restrictions.

Except as allowed otherwise elsewhere in this RFP, the Design-Build Team shall maintain the existing traffic pattern and shall not close or narrow a single lane of traffic during the times listed in ICT #2.

Intermediate Contract Time #2

Road Name	Day	Time Restrictions
Mainline, I-40, and all ramps and loops	Monday through Sunday	5:00 a.m. to 9:00 p.m.

In locations where there are 3 or more lanes of travel in a direction, the Design-Build Team shall maintain the existing traffic pattern and shall not close or narrow two lanes of traffic during the times listed in ICT #3.

Intermediate Contract Time #3

Road Name	Day	Time Restrictions
Mainline and I-40	Monday through Sunday	5:00 a.m. to 11:00 p.m.

Except as allowed otherwise in this RFP, the Design-Build Team shall maintain the existing traffic pattern and shall not close or narrow a lane of traffic during the times listed in ICT #4 and ICT #5.

Intermediate Contract Times #4 and #5

Intermediate Contract Time #	Road Name	Day	Time Restrictions
#4	Jones Franklin Road, Western Boulevard, Hillsborough Street and Wade Avenue	Monday through Friday	5:00 a.m. to 9:00 p.m.
#5	All other roads	Monday through Friday	5:00 a.m. to 9:00 a.m. and 3:00 p.m. to 8:00 p.m.

The Design-Build Team shall not install, reset and / or remove any traffic control device during the times listed in ICT #2 – ICT #5.

In addition, the Design-Build Team shall not close or narrow a lane of traffic on the aforementioned facilities, detain, and / or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy unless allowed otherwise elsewhere in this RFP. At a minimum, these requirements / restrictions shall apply to the following schedules:

(a) For New Year's between the hours of 5:00 a.m. December 31st and 9:00 p.m. January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday then from 9:00 p.m. the following Tuesday.

(b) For Easter, between the hours of 5:00 a.m. Thursday and 9:00 p.m. Monday.

(c) For Memorial Day, between the hours of 5:00 a.m. Friday and 9:00 p.m. Tuesday.

(d) For Independence Day, between the hours of 5:00 a.m. July 3rd and 9:00 p.m. July 5th. If Independence Day is on a Friday, Saturday, Sunday or Monday, then between the hours of 5:00 a.m. the Thursday before Independence Day and 9:00 p.m. the Tuesday after Independence Day.

(e) For Labor Day, between the hours of 5:00 a.m. Friday and 9:00 p.m. Tuesday.

(f) For Thanksgiving Day, between the hours of 5:00 a.m. Tuesday and 9:00 p.m. Monday.

(g) For Christmas, between the hours of 5:00 a.m. the Friday before the week of Christmas Day and 9:00 p.m. the following Tuesday after the week of Christmas Day.

(h) For the North Carolina State Fair, the mainline, I-40, Hillsborough Street, Blue Ridge Road, Western Boulevard, Wade Avenue, Jones Franklin Road, Beryl Road, Pylon Dr., Trinity Road, and all ramps and loops, every day the State Fair is open to the public from 9:00 a.m. to 12:00 a.m. (midnight).

(i) For football games at Carter-Finley Stadium the mainline, I-40, Hillsborough Street, Blue Ridge Road, Western Boulevard, Wade Avenue, Beryl Road, Pylon Dr., Trinity Road, and all ramps and loops, from three (3) hours before the beginning of an event to two (2) hours after the end of an event.

(j) For the following events at Meredith College, the Hillsborough Street ramps and loops:

- August 15 to August 24 for the arrival of new students.
- Second weekend in May for commencement from Friday at 9:00 p.m. to Monday at 6:00 a.m.
- **** NOTE **** Deleted bullet for commencement on the third weekend in May
- November 1 to November 6 for Cornhuskin'.

Liquidated Damages for Intermediate Contract Time #2 for the above lane narrowing, lane closure, holiday and special event time restrictions for a single lane on the mainline, I-40 and all ramps and loops are $2,500.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #3 for the above lane narrowing, lane closure, holiday and special event time restrictions for two lanes of a three or more lane section (in one direction) on the mainline and I-40 are $5,000.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #4 for the above lane narrowing, lane closure, holiday and special event time restrictions for Jones Franklin Road, Western Boulevard, Hillsborough Street, and Wade Avenue are $1,250.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #5 for the above lane narrowing, lane closure, holiday and special event time restrictions for all roads not included in ICT #2 – ICT #4 are $1,000.00 per hour or any portion thereof.

2. **Intermediate Contract Times #6 and #7 for Road Closure Restrictions for Construction Operations**

Unless allowed otherwise elsewhere in this RFP, at a minimum, the Design-Build Team shall maintain the existing traffic pattern and follow the road closure restrictions for all roadways listed in ICT #6 and ICT #7. When a temporary road closure is used, the Design-Build Team shall reopen the travel lanes by the end of the road closure duration to allow the traffic queue to deplete before re-closing the roadway.

Unless allowed otherwise elsewhere in this RFP, the Design-Build Team shall 1) not close any direction of travel on the following roads or any ramps / loops during the times noted in ICT #6 and ICT #7; and 2) only close the following roads or any ramps / loops for the operations listed in this intermediate contract time restriction. Using a median cross-over, exclusively for the operations listed below, shall be defined as a closure of a direction of travel.

A crossover providing one lane in each direction on the mainline will be allowed for the purpose of bridge demolition, and girder, overhang, and falsework installation and / or removal during the times set forth in ICT #6 and ICT #7. No other roads shall be put in a crossover pattern for these same purposes. If the Design-Build Team elects to use a crossover for the aforementioned activities, during the times set forth in ICT #6 and ICT #7, the crossover shall be designed and constructed to meet a design speed of no more than 20 mph below the original posted speed limit prior to implementation of a reduced work zone speed limit. Unless approved otherwise by the Department, in writing, the maximum allowable distance between the crossovers shall be 2,750.00 feet. The Design-Build Team shall monitor the traffic queue during operation of the crossover. Should the traffic queue extend to the advance warning signs, traffic shall be returned to the existing number of lanes in each direction until the traffic queue is depleted.

Intermediate Contract Times #6 and #7

Intermediate Contract Time #	Road Name	Day	Time Restrictions
#6	Mainline, including all ramps and loops	Monday through Sunday	5:00 a.m. until 12:00 a.m. (midnight)
#7	Western Boulevard, Beryl Road, Hillsborough Street, and Wade Avenue	Monday through Sunday	5:00 a.m. until 11:00 p.m.

For the operations noted below, the maximum road closure duration shall not exceed **thirty (30) minutes** without an approved offsite detour. With an approved offsite

detour, the roadways listed may be closed during the time listed in ICT #6 and ICT #7 for the operations listed below.

- Bridge demolition
- Girder, overhang, and falsework installation and / or removal
- Installation of overhead sign assemblies and / or work on existing overhead sign assemblies over travel lanes
- **** NOTE **** Deleted bullet on shifting traffic to the diverging diamond crossover pattern at DDI interchanges

Proposed road closures for any road within the project limits shall be approved by the Engineer, in writing, prior to incorporation in the Transportation Management Plans.

Liquidated Damages for Intermediate Contract Time #6 for the above road closure time restrictions for the mainline, including all ramps and loops are $5,000.00 per 15-minute period or any portion thereof.

Liquidated Damages for Intermediate Contract Time #7 for the above road closure time restrictions for Western Boulevard, Beryl Road, Hillsborough Street, and Wade Avenue are $2,500.00 per 15-minute period or any portion thereof.

3. Intermediate Contract Times #8 through #12 for Ramp Reconstruction

One road closure, with an approved offsite detour, will be permitted for the reconstruction of each ramp / loop at the following interchanges for the maximum durations listed in ICT #8 – ICT #12. The Design-Build Team shall not concurrently close both on-ramps / loops and / or both off-ramps / loops at the same interchange. The Design-Build Team shall not concurrently close any ramps or loops at adjacent interchanges.

Intermediate Contract Times # 8 - #12 for Ramp Reconstruction are as listed in the table below:

Intermediate Contract Times #8 through #12

Intermediate Contract Time #	Interchange	Day	Duration (Per ramp or loop)	Liquidated Damages (per hour or any portion thereof)
#8	Jones Franklin Road / Mainline	From Friday at 9:00 p.m. until 5:00 a.m. the second Monday	224 consecutive hours	$2,000.00
#9	Melbourne Road / Mainline	From Friday at 9:00 p.m. until 5:00 a.m. the second Monday	224 consecutive hours	$2,000.00
#10	Western Boulevard / Mainline	From Friday at 9:00 p.m. until 5:00 a.m. the second Monday	224 consecutive hours	$2,000.00
#11	Hillsborough Street / Mainline	From Friday at 9:00 p.m. until 5:00 a.m. the second Monday	224 consecutive hours	$2,000.00
#12	Wade Avenue / Mainline	From Friday at 9:00 p.m. until 5:00 a.m. the second Monday	224 consecutive hours	$2,000.00

The date of availability shall be the date the Design-Build Team elects to close the ramp / loop. The Design-Build Team shall provide the Engineer a minimum of 30 days written notice prior to the date of availability. The date of completion shall be the number of consecutive hours proposed by the Design-Build Team in the Technical Proposal, and such number of consecutive hours proposed shall not be greater than the hours noted in ICT #8 – ICT #12.

4. Intermediate Contract Times #13 through #17 for Bridge Removal / Construction

One road closure with an approved offsite detour will be permitted for the removal and / or construction of each bridge and adjacent roadway improvements for the maximum durations listed in ICT #13 – ICT #17. Each bridge and adjacent roadway improvements shall be reopened to traffic within the allotted road closure duration.

Intermediate Contract Times #13 through #17

Intermediate Contract Time #	Facility	Duration
#13	Jones Franklin Road	1 weekend (Friday at 9:00 p.m. to Monday at 5:00 a.m.)
#14	Athens Drive	365 days
#15	Melbourne Road	365 days
#16	Ligon Street	420 days
#17	Beryl Road	545 days

The date of availability shall be the date the Design-Build Team elects to close the road and / or tunnel. The Design-Build Team shall provide the Engineer a minimum of 30 days written notice prior to the date of availability. The date of completion shall be the number of calendar days proposed by the Design-Build Team in the Technical proposal, and such number of calendar days proposed shall not be greater than the days noted in ICT #13 – ICT #17.

Liquidated Damages for Intermediate Contract Time #13 for the above road closure time restrictions for Jones Franklin Road are $2,000.00 per hour or any portion thereof.

Liquidated Damages for Intermediate Contract Time #14 for the above road closure time restrictions for Athens Drive are $2,000.00 per calendar day or any portion thereof.

Liquidated Damages for Intermediate Contract Time #15 for the above road closure time restrictions for Melbourne Road are $1,000.00 per calendar day or any portion thereof.

Liquidated Damages for Intermediate Contract Time #16 for the above road closure time restrictions for Ligon Street are $1,000.00 per calendar day or any portion thereof.

Liquidated Damages for Intermediate Contract Time #17 for the above road closure time restrictions for Beryl Road are $1,000.00 per calendar day or any portion thereof.

5. Intermediate Contract Time #21 for Interchange Closure Restrictions for Construction Operations

One interchange closure, (-Y- Line and all associated ramps / loops), with approved offsite detours, will be permitted to shift traffic to the diverging diamond crossover pattern for the maximum duration listed in ICT #21. The interchange, including the -Y- Line and all associated ramps / loops, shall be reopened to traffic within the allotted road closure duration.

Intermediate Contract Time #21

Interchange	Day	Duration (Per interchange)
Western Boulevard / Mainline	From Friday at 9:00 p.m. until 5:00 a.m. Monday	56 consecutive hours

The date of availability shall be the date the Design-Build Team elects to close the interchange. The Design-Build Team shall provide the Engineer a minimum of 30 days written notice prior to the date of availability. The date of completion shall be the number of consecutive hours proposed by the Design-Build Team in the Technical Proposal, and such number of consecutive hours proposed shall not be greater than the hours noted in ICT #21.

Liquidated Damages for Intermediate Contract Time #21 for the above interchange closure time restrictions for the Western Boulevard / Mainline interchange, are $2,500.00 per 15-minute period or any portion thereof.

B. Hauling Restrictions

The Design-Build Team shall adhere to the hauling restrictions noted in the 2018 NCDOT *Standard Specifications for Roads and Structures*.

The Design-Build Team shall conduct all hauling operations as follows:

- The Design-Build Team shall not conduct any hauling operations against the flow of traffic of an open travelway unless an approved temporary traffic barrier or guardrail separates the traffic from the hauling operation.

- The Design-Build Team shall not haul during the holiday and special events time restrictions listed in ICT #2 through ICT #5 unless the hauling operation occurs completely behind temporary traffic barrier or guardrail and does not impact traffic operations.

- All hauling entrances, exits and crossings shall be shown on the TMP and be in accordance with the 2018 NCDOT Roadway Standard Drawings or the *Typical Median Access Areas* Project Special Provision found elsewhere in this RFP. All hauling entrances, exits, and median access point locations shall be approved by the Department prior to installation.

UTILITIES COORDINATION SCOPE OF WORK (6-18-18)

The Design-Build Team shall obtain the services of a Professional Services Firm (PSF) knowledgeable in the NCDOT Utility Coordination Process involved with utility relocation / installation and highway construction. The aforementioned PSF shall be responsible for coordinating all utility relocations, removals and / or adjustments where the Design-Build Team and utility owner, 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.

During the procurement phase, the Department will allow no direct contact, either by phone, e-mail or in person, between the Design-Build Team and utility owners until after the meetings between each individual proposer and the affected utility owners. After the aforementioned meetings and during the project duration, the Design-Build Team will only be allowed direct contact with the utility owners when the aforementioned PSF is present. (Reference the *Individual Meeting with Proposers* Project Special Provision found elsewhere in this RFP)

In accordance with the requirements herein, the Design-Build Team shall relocate / coordinate the relocation of all existing facilities that are 1) within existing or proposed full control of access and only accessible from a freeway through lane and / or ramp / loop, 2) in physical conflict with construction, 3) within the existing or proposed right of way and structurally inadequate, and / or 4) within the existing or proposed right of way and consist of unacceptable material. (Reference the NCDOT Policies and Procedures for Accommodating Utilities on Highway Rights of Way – January 1, 1975, Revised April 1, 1993) Proposed / relocated underground facilities that are located beneath the pavement structure shall only be allowed to cross the roadway as close to perpendicular as possible.

Project Details

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. The following utilities are known to be located within the project construction limits: