



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

July 24, 2018

**Addendum No. 2**

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. 2 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. 2 for your information. Please note that all revisions have been highlighted in gray and are as follows:

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 Nos. 19 and 20 of the *Disadvantaged Business Enterprise Project Special Provision* have been revised. Please void Page Nos. 19 and 20 in your proposal and staple the revised Page Nos. 19 and 20 thereto.

Page No. 80 of the *Procedure for Monitoring Borrow Pit Discharge Project Special Provision* has been revised. Please void Page No. 80 in your proposal and staple the revised Page No. 80 thereto.

Page Nos. 240, 242, and 247 of the *Roadway Scope of Work* have been revised. Please void Page Nos. 240, 242, and 247 in your proposal and staple the revised Page Nos. 240, 242, and 247 thereto.

Page No. 254 of the *Environmental Permits Scope of Work* has been revised. Please void Page No. 254 in your proposal and staple the revised Page No. 254 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](http://www.ncdot.gov)

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

Page Nos. 264, 265 and 267 of the *Erosion and Sedimentation Control Scope of Work* have been revised. Please void Page Nos. 264, 265 and 267 in your proposal and staple the revised Page Nos. 264, 265 and 267 thereto.

Page Nos. 287 and 290 of the *Hydraulics Scope of Work* have been revised. Please void Page Nos. 287 and 290 in your proposal and staple the revised Page Nos. 287 and 290 thereto.

Page Nos. 315 and 320 of the *Pavement Management Scope of Work* have been revised. Please void Page Nos. 315 and 320 in your proposal and staple the revised Page Nos. 315 and 320 thereto.

Page Nos. 332 and 333 of the *Railroad Coordination Scope of Work* have been revised. Please void Page Nos. 332 and 333 in your proposal and staple the revised Page Nos. 332 and 333 thereto.


Page Nos. 355 and 360 of the *Structures Scope of Work* have been revised. Please void Page Nos. 355 and 360 in your proposal and staple the revised Page Nos. 355 and 360 thereto.

Page No. 365 of the *Traffic Signals and Signal Communication Scope of Work* has been revised. Please void Page No. 365 in your proposal and staple the revised Page No. 365 thereto.

Page No. 422 of the *Utilities Coordination Scope of Work* has been revised. Please void Page No. 422 in your proposal and staple the revised Page No. 422 thereto.

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

Sincerely,

DocuSigned by:  
  
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

**TABLE OF CONTENTS**

**COVER SHEET**

**PROPOSAL SHEETS**

**PROJECT SPECIAL PROVISIONS PAGE NO.**

Contract Time and Liquidated Damages .....1  
 Intermediate Contract Time Number 1 and Liquidated Damages .....1  
 Other Liquidated Damages and Incentives .....3  
 Funding Differentiation .....5  
 Required Provision for TIGER Grant .....5  
 Payout Schedule.....6  
 Mobilization.....6  
 Substantial Completion.....6  
 Submittal of Quantities, Fuel Base Index Price and Opt-Out Option.....7  
 Individual Meetings with Proposers .....8  
 Partnering.....9  
 Execution of Bid, Non-Collusion Affidavit, Debarment Certification  
 and Gift Ban Certification.....10  
 Submission of Design-Build Proposal .....10  
 Alternative Technical Concepts and Confidential Questions .....11  
 Schedule of Estimated Completion Progress.....16  
 Disadvantaged Business Enterprise .....17  
 Special Notice To Bidders .....31  
 Protection Of Railroad Interest – NCRR And NSR.....32  
 Railroad General Special Provisions - CSX Transportation, Inc.....55  
 Certification for Federal-Aid Contracts .....66  
 Contractor’s License Requirements .....67  
 U. S. Department of Transportation Hotline.....67  
 Cargo Preference Act.....67  
 Subsurface Information.....68  
 Cooperation between Contractors .....68  
 Bid Documentation .....69  
 Twelve Month Guarantee .....72  
 Permanent Vegetation Establishment .....73  
 Erosion & Sediment Control / Storm Water Certification.....74  
 Procedure for Monitoring Borrow Pit Discharge.....79  
 Clearing and Grubbing.....81  
 Burning Restrictions .....81  
 Building and Appurtenance Removal / Demolition.....81  
 Manufactured Quarry Fines in Embankments .....82  
 Reinforced Concrete Pipe Design .....83  
 Drainage Pipe .....85

**\*\* NOTE \*\* Deleted Cement and Lime Stabilization of Sub-Grade Soils**

Cement Treated Base Course.....85  
Price Adjustments for Asphalt Binder .....87  
Price Adjustments - Asphalt Concrete Plant Mix .....87  
Field Office .....88  
Dynamic Message Sign .....90  
High Definition CCTV Wood Pole and Field Equipment.....129  
Requirements for Cables Crossing Railroads .....137  
Geotextile for Pavement Stabilization .....139  
Foundation and Anchor Rod Assemblies for Metal Poles.....140  
Overhead and Dynamic Message Sign Foundations .....147  
Roadway Lighting Foundations.....149  
Lighting.....151  
High Visibility Traffic Control Devices .....169  
Work Zone Traffic “Pattern Masking” .....171  
Black Epoxy Pavement Marking Material.....175  
Sequential Flashing Warning Lights.....178  
Work Zone Presence Lighting .....181  
Work Zone Digital Speed Limit Signs.....184  
Sound Barrier Wall .....187  
Architectural Concrete Surface Treatment .....189  
Diamond Grinding Concrete Pavement .....194  
Nonwoven Geotextile Interlayer.....196  
Greenways and Multi-Use Paths .....198  
Typical Median Access Areas .....200  
Irrigation System .....210  
Planter Soil Mix .....211  
Control of Noise .....215

**GENERAL .....216**

**SCOPES OF WORK**

Roadway .....235  
Environmental Permits.....253  
Erosion and Sedimentation Control .....259  
GeoEnvironmental .....274  
Geotechnical Engineering .....276  
Hydraulics .....286  
ITS.....296  
Lighting.....306  
Pavement Management.....309  
Pavement Markings .....324  
Public Involvement and Information .....327

**Addendum No. 2, July 24, 2018**

C204157 (U-2719 / U-4437)

Table of Contents

Wake County

Railroad Coordination .....330

Right of Way.....341

Signing .....346

Structures .....355

Traffic Signals and Signal Communications .....363

Transportation Management .....385

Utilities Coordination.....421

**STANDARD SPECIAL PROVISIONS**

Railroad Grade Crossing.....429

Plant and Pest Quarantines.....429

Rock and Broken Pavement Fills.....430

Bridge Approach Fills.....430

Alternate Bridge Approach Fills for Integral Abutments .....433

Automated Fine Grading.....434

**\*\* NOTE \*\* Deleted Class IV Subgrade Stabilization in Lieu of Chemical Stabilization**

Aggregate Subgrade .....435

Final Surface Testing – Asphalt Pavements .....436

Open Graded Asphalt Friction Course, Permeable Asphalt Drainage Course, and Ultra- Thin Bonded Wearing Course .....436

Asphalt Concrete Plant Mix Pavements .....438

Subsurface Drainage .....441

Guardrail End Units, Type TL-3.....441

Guardrail Anchor Units and Temporary Guardrail Anchor Units .....442

Impact Attenuator Units, Type 350 (TL-3).....442

Temporary Shoring .....443

On-the-Job Training.....454

Availability of Funds – Termination of Contracts.....457

NCDOT General Seed Specifications for Seed Quality .....458

Title VI and Nondiscrimination .....461

Minority and Female Employment Requirements.....471

Required Contract Provisions Federal-Aid Construction Contracts .....474

General Decision Wages.....483

Division One .....488

**PROPOSAL FORMS - ITEMIZED SHEET, ETC.**

- Itemized Proposal Sheet (TAN SHEET)
- Fuel Usage Factor Chart and Estimate of Quantities
- Listing of DBE Subcontractors
- Execution of Bid, Non-Collusion Affidavit, Debarment Certification and Gift Ban Certification
- Signature Sheet

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

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

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

*Listing of DBE Subcontractors Form* - Form for entering DBE subcontractors on a project that will meet this DBE goal contained elsewhere in this RFP.

**<https://connect.ncdot.gov/municipalities/Pages/Bid-Proposals-for-LGA.aspx>**

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

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

## **DBE Goal**

The following DBE goal for participation by Disadvantaged Business Enterprises is established for this contract:

Disadvantaged Business Enterprises **10.0%**

- (A) *If the DBE goal is more than zero*, the Design-Build Team shall exercise all necessary and reasonable steps to ensure that DBEs participate in at least the percent of the contract as set forth above as the DBE goal.
- (B) *If the DBE goal is zero*, the Design-Build Team shall make an effort to recruit and use DBEs during the performance of the contract. Any DBE participation obtained shall be reported to the Department.

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

## **Directory of Transportation Firms (Directory)**

Real-time information is available about firms doing business with the Department and firms that are certified through NCUCP in the Directory of Transportation Firms. Only firms identified

in the Directory as DBE certified shall be used to meet the DBE goal. The Directory can be found at the following link.

<https://www.ebs.nc.gov/VendorDirectory/default.html>

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

### **Listing of DBE Subcontractors**

At the time of bid, Proposers shall submit all DBE participation that they anticipate to use during the life of the contract. Only those identified to meet the DBE goal will be considered committed, even though the listing shall include both committed DBE subcontractors and additional DBE subcontractors. Additional DBE subcontractor participation submitted at the time of bid will be used toward the Department's overall race-neutral goal. Only those firms with current DBE certification at the time of Price Proposal opening will be acceptable for listing in the Proposer's submittal of DBE participation. The Design-Build Team shall indicate the following required information:

- (1) *If the DBE goal is more than zero,*
  - (a) Proposers, at the time the Price Proposal is submitted, shall submit a listing of DBE participation, including the names and addresses on *Listing of DBE Subcontractors* contained elsewhere in the contract documents in order for the Price Proposal to be considered responsive. Proposers shall indicate the total dollar value of the DBE participation for the contract.
  - (b) If Proposers have no DBE participation, they shall indicate this on the *Listing of DBE Subcontractors* by entering the word "None" or the number "0." This form shall be completed in its entirety. **Blank forms will not be deemed to represent zero participation.** Price Proposals submitted that do not have DBE participation indicated on the appropriate form will not be read publicly during the opening of the Price Proposals. The Department will not consider these Price Proposals for award and the proposal will be rejected.
  - (c) The Proposer shall be responsible for ensuring that the DBE is certified at the time of bid by checking the Directory of Transportation Firms. If the firm is not certified at the time of the opening of the Price Proposals, that DBE's participation will not count towards achieving the corresponding goal.
- (2) *If the DBE goal is zero,* entries on the *Listing of DBE Subcontractors* are not required for the zero goal, however any DBE participation that is achieved during the project shall be reported in accordance with requirements contained elsewhere in this special provision.

- (C) Measure and record the turbidity test results (time, date and sampler) at all defined sampling locations 30 minutes after startup and at a minimum, one additional sampling of all sampling locations during that 24-hour period in which the borrow pit is discharging.
- (D) Notify DWR within 24 hours of any stream turbidity standard exceedances that are not brought into compliance.

During the Environmental Assessment required by Article 230-4 of the 2018 *Standard Specifications for Roads and Structures*, the Design-Build Team shall define the point at which the discharge enters into the State's surface waters and the appropriate sampling locations. Sampling locations shall include points upstream and downstream from the point at which the discharge enters these waters. Upstream sampling location shall be located so that it is not influenced by backwater conditions and represents natural background conditions. Downstream sampling location shall be located at the point where complete mixing of the discharge and receiving water has occurred.

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

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

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

**[https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/  
TurbidityReductionOptionSheet.pdf](https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/TurbidityReductionOptionSheet.pdf)**

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



provided by the Department, 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-, and 3) the sidewalk along SR 1012 (Western Boulevard) shown in the U2719\_WesternSidewalkExt\_Option1\_050918 Map provided by the Department. 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.

- To accommodate the sidewalk along SR 1012 (Western Boulevard) noted above, the Design-Build Team shall design and construct improvements to Chaney Road, including but not limited to providing ADA compliant crosswalks and all required retaining walls.
- 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. For the NC State Fairgrounds property, only those areas shown within the historic boundaries on the U-4437 Combined Public Hearing Map are considered protected landmarks / features.
  - Sidewalk transitions, from proposed sidewalk width to existing sidewalk width, shall be a minimum of 50 feet.

**General**

- Unless allowed otherwise elsewhere in this RFP, the design shall be in accordance with the 2011 AASHTO *A Policy on Geometric Design of Highways and Streets* and 2013 Errata, 2002 NCDOT *Roadway Design Manual*, including all revisions effective on the Technical Proposal submittal date, January 2018 NCDOT *Roadway Standard Drawings*, or as superseded by detail sheets located at <https://connect.ncdot.gov/resources/Specifications/Pages/2018-Roadway-Standard-Drawings.aspx> *Roadway Design Policy and Procedure Manual*, *Roadway Design Guidelines for Design-Build Projects*, 2018 NCDOT *Standard Specifications for Roads and Structures* and the 2011 AASHTO *Roadside Design Guide*, 4th Edition and 2015 Errata.
- If the NCDOT *Roadway Design Manual*, including all revisions, the 2011 AASHTO *A Policy on Geometric Design of Highways and Streets* and 2013 Errata, the 2018 NCDOT *Roadway Standard Drawings* and / or any other guidelines, standards or policies have desirable and / or minimum values, the Design-Build Team shall use the desirable values unless noted otherwise elsewhere in this RFP. Similarly, in case of conflicting design parameters, and / or ranges, in the various resources, the proposed design shall adhere to the most conservative values, unless noted otherwise elsewhere in this RFP.
- At all intersections, the Design-Build Team shall not exceed a 0.05 roll-over between the outside edge of travel lane of the primary roadway and the beginning of the proposed grade for the secondary roadway.
- Unless noted otherwise elsewhere in this RFP, the maximum allowable cut and fill slope shall be 2:1. (Reference the Geotechnical Scope of Work found elsewhere in this RFP) The slopes in the interchange area shall follow the requirements set forth in the *Roadway Design Guidelines for Design-Build Projects* located on the Design-Build web site.
- Outside the project limits, the Design-Build Team will not be allowed to use the NCDOT right of way and / or property for borrow or waste sites. Within the project limits, the Design-Build Team shall adhere to the following:
  - Only clean waste material may be wasted within the NCDOT right of way or property.
  - Excluding crushed concrete, debris shall not be buried within the NCDOT right of way or property.
  - Normal grading operations shall occur, including but not limited to, removal of the existing embankments supporting all removed roadway sections.
- Unless noted otherwise elsewhere in this RFP, all guardrail / guiderail placement shall be in accordance with the NCDOT *Roadway Standard Drawings* and / or approved details in lieu of standards. Along all 3:1 fill slopes, constructed at fill heights that are equal to or greater than 12 feet, the Design-Build Team shall install guardrail. Along all fill slopes steeper than 3:1, constructed at fill heights that are equal to or greater than six feet, the Design-Build

Points 4B and 4C Meetings. Any variations in the Department's proposed design and / or construction methods that nullify any Concurrence Points obtained or decisions reached between the Department and the environmental agencies; and / or require additional coordination with the environmental agencies shall be the sole responsibility of the Design-Build Team. The Department will not allow any contract time extensions or compensation associated with this additional coordination. The Design-Build Team shall follow the appropriate details in the document titled "Section 404 / NEPA Merger Process Information" which can be found at the website noted below:

**<https://connect.ncdot.gov/resources/Environmental/Pages/Merger-Process-Guide.aspx>**

Unless stipulated otherwise in the Technical Proposal, the Department will schedule the 4B and 4C Meetings for March 2019 and June 2019, respectively. The Design-Build Team shall clearly identify in their Technical Proposal what months they would like the Department to schedule these meetings. Failure on the part of the Design-Build Team to meet these dates shall place all responsibility for delays resulting from missing these dates solely in the hands of the Design-Build Team.

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall be bound by the terms of all signed planning documents, and approved minutes and commitments of all interagency / concurrence meetings. The Design-Build Team shall be held accountable for meeting all permit conditions. The Design-Build Team shall be required to staff any personnel necessary to provide permit compliance.

Unless noted otherwise elsewhere in this RFP, the Department will not honor any requests for additional contract time or compensation for any efforts required in order to obtain any permit or permit modification, including but not limited to public involvement, additional design effort, additional construction effort, and / or additional environmental agency coordination and approvals.

#### **Permit Application Process and Timeframe for all Permits except the Nationwide Permit No. 6 for Geotechnical Investigations**

It shall be the Design-Build Team's responsibility to acquire information and prepare permit drawings that reflect the impacts and minimization efforts resulting from the Merger Process and from the project as designed by the Design-Build Team. Further, it shall be the Design-Build Team's responsibility to provide these permit impact sheets (drawings) depicting the design and construction details to the Department as part of the permit application. The Design-Build Team shall be responsible for developing the permit application for all jurisdictional impacts. The permit application shall include all utility relocations required by the project. At a minimum, the permit application shall consist of the following:

- C. Provide reforestation sheet(s): regular, wetland, streambank and / or buffer showing appropriate species.

### **III. Title Sheet**

- A. Show correct notes: NCG-01, HQW, ESA, clearing and grubbing, etc.
- B. Show correct standards for project
- C. List of standard NCDOT symbology
- D. Show name and certification number of Level III certified individual responsible for designing and / or reviewing Erosion and Sedimentation Control Plans
- E. Show name of primary NCDOT Roadside Environmental Unit Erosion and Sedimentation Control Plan reviewer

### **IV. Special Provisions**

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

**<https://connect.ncdot.gov/resources/roadside/Pages/Soil-Water.aspx>**
- B. References in Erosion Control Special Provisions from the aforementioned website to Method of Measurement, Basis of Payment, or any other statement regarding direct payment for Erosion & Sediment Control measures shall be disregarded.
- C. *Erosion & Sediment Control / Stormwater Certification* Project Special Provision found elsewhere in this RFP.

### **V. Miscellaneous**

- A. Plan submittals shall include all pertinent design information required for review, such as design calculations, drainage areas, etc.
- B. The NCDOT Roadside Environmental Unit will provide a sample set of Erosion and Sedimentation Control Plans (including any special details or special provisions used by the NCDOT Roadside Environmental Unit) and MicroStation Erosion Control Workspace to the Design-Build Team for reference upon request.
- C. Plans shall address any environmental issues raised during the permitting process.
- D. The Design-Build Team shall allow sufficient time in the proposed schedule to address any comments to the Erosion and Sedimentation Control Plans, as deemed necessary by the NCDOT Roadside Environmental Unit.
- E. Temporary access and haul roads, other than public roads, constructed or used in connection with the project shall be considered a part of the project and addressed in the Erosion and Sedimentation Control Plans. Temporary access and haul roads located within the footprint and / or the right of way / easement corridor of the project shall be part of the highway Erosion and Sedimentation Control Plans. Temporary access and haul roads associated with borrow pits and staging areas shall be included in the Reclamation Plan.
- F. At a minimum, the Design-Build Team shall install Floating Turbidity Curtain at pods, lakes, and other jurisdictional standing water bodies 1) where construction activities

create surface fill impacts 2) or where sufficient erosion and sediment control devices cannot be installed to contain sediment and/or turbidity impacts.

- G. To contain concrete waste water and associated concrete mix from washing out ready-mix trucks, drums, pumps, or other equipment, provide Concrete Washout Structures at egress points. Concrete Washout Structures must collect and retain all concrete waste water and solids so that this material does not migrate to surface waters or into the ground water. The Concrete Washout Structures are not intended for concrete waste not associated with washout operations. The Concrete Washout Structures may include devices above or below ground and / or commercially available devices designed specifically to capture concrete waste water. Concrete Washout Structure options may be found in the special provision, available at the website noted in Section IV above. For construction details of an above grade and below grade Concrete Washout Structure, reference the website noted below:

**[https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/  
ConcreteWashoutStructure.pdf](https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/ConcreteWashoutStructure.pdf)**

- H. Borrow or waste areas that are part of the project shall require a separate Reclamation Plan, unless the borrow or waste activity is regulated under the *Mining Act of 1971*, or is a landfill regulated by the NCDEQ - Division of Waste Management (DWM). For newly created borrow pit(s) that require dewatering, Borrow Pit(s) Dewatering Basins shall be required and shall be in accordance with the applicable special provisions available at the website noted in Section IV above. The Design-Build Team shall submit the location and permit number for waste / borrow sites covered by the aforementioned Mining Act or regulated by the NCDEQ - DWM concurrently to the Design-Build Unit and the Resident Engineer. For Reclamation Procedures, see:

**[https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/  
ContractedReclamationProcedures.pdf](https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/ContractedReclamationProcedures.pdf)**

- I. Whenever the Engineer determines that significant erosion and sedimentation continues despite the installation of approved protective practices, the Design-Build Team shall be required to, and shall, take additional protective action.
- J. An accepted Erosion and Sedimentation Control Plan shall not exempt the Design-Build Team from making every effort to contain sediment onsite.
- K. Any Erosion Control Design revision made during the construction of the project shall be submitted to NCDOT Roadside Environmental Unit by the 15<sup>th</sup> of the month via the Design-Build Unit. At any time requested by the Engineer or the NCDOT Roadside Environmental Unit, the Design-Build Team shall provide an updated version of the Erosion and Sedimentation Control Plans for distribution to all parties involved in the construction process.
- L. The Design-Build Team shall comply with the North Carolina Administrative Code *Title 15A Environmental Quality* Chapter 4, Sedimentation Control.
- M. A pre-submittal meeting shall take place between the NCDOT Roadside Environmental Unit Soil & Water Engineering Section, the Design-Build Team, and any other pertinent NCDOT personnel before any Erosion and Sedimentation Control Designs are submitted to NCDOT Roadside Environmental Unit. Erosion and Sedimentation Control Plan

- R. Erosion & Sediment Control / Stormwater Certification shall be required according to the Project Special Provision found elsewhere in this RFP.
- S. Prior to installation of any erosion control devices, the Design-Build Team shall verify boundaries of jurisdictional areas in the field and delineate with Safety Fence or flagging. For guidance on Safety Fence and flagging in jurisdictional areas, see:

**<https://connect.ncdot.gov/resources/roadside/Pages/Field-Operations-Documents.aspx>**

- T. Once RFC Erosion and Sedimentation Control Plans are issued, any major design change or addition, any change that involves calculations, and any addition, deletion, or relocation of a sediment basin shall be submitted to the NCDOT Roadside Environmental Unit, via the Design-Build Unit, for review and acceptance. Minor changes such as moving silt fence, adding or moving temporary ditches (unless adding new runoff flow to a sediment basin), and adding or moving slope drains shall be reviewed by the Engineer in the field.
- U. All erosion control measures with stone extending beyond the construction limits shall be considered temporary fill. If impacted wetland areas are permitted as Hand Clearing, then the aforementioned temporary fill shall be permitted as Temporary Fill in Hand Cleared Areas for Erosion Control. (Reference the Environmental Permits Scope of Work found elsewhere in this RFP)
- V. Sediment basins that drain directly into jurisdictional water or have a total drainage area of one acre or more shall be designed and constructed with outlet structures that only withdraw water from the surface. For sediment basins that do not drain directly into jurisdictional water or have less than one acre of total drainage area, surface dewatering outlets or stone outlets may be provided.
- W. In accordance with the requirements noted herein, the Design-Build Team shall be responsible for erosion control design, plans, plan implementation and maintenance of erosion control measures for all utility installation and relocation work performed by the Design-Build Team. To ensure that the Design-Build Team's erosion control designs, plan implementation and / or maintenance of erosion control measures do not conflict with the erosion control design, plan implementation and / or maintenance of erosion control measures for utility installation and / or relocation work performed by others, the Design-Build Team shall coordinate with the utility companies performing Utilities by Others (UBO) work.
- X. Ground Cover Stabilization Requirements - NCG010000 (7 - 14 Days)

Ground cover stabilization shall comply with the timeframe guidelines specified by the North Carolina Department of Environmental Quality, Division of Water Resources NCG-010000 General Construction Permit that became effective on August 1, 2016. Excluding the slopes noted below, temporary and permanent ground cover stabilization shall be provided within seven calendar days from the last land-disturbing activity. The Design-Build Team shall label all slopes subject to the seven-day ground cover stabilization requirements on all Erosion and Sedimentation Control Plans submitted to the Department for review and acceptance.

## Hydraulic Spread

- The hydraulic spread shall not encroach into any operational lane beyond the limits noted below:
  - For roadways, the hydraulic spread shall not exceed the values specified in Table 10-1 of the current North Carolina Division of Highways *Guidelines for Drainage Studies and Hydraulics Design* (2016).
  - For shoulder facilities, including those with expressway gutter and shoulder berm gutter, the hydraulic spread shall not encroach into a permanent travel lane and shall not encroach more than two feet into an operational temporary travel lane.
  - For bridges on alignments with design speeds greater than 45 mph, the hydraulic spread shall not encroach into an operational permanent or temporary through lane on a bridge. The hydraulic spread shall not encroach more than a distance that equals half the lane width or six feet, whichever is less, into an operational permanent or temporary exclusive turn lane.
  - For bridges on alignments with design speeds equal to or less than 45 mph, the hydraulic spread shall not encroach more than four (4) feet into an operational permanent or temporary through lane or exclusive turn lane.
  - For existing bridges with no alteration to the travel lanes or shoulders (location and / or widths), hydraulic spread will be allowed to encroach into an operational travel lane to an extent equal to that present in the existing (pre-project) conditions.
- The Design-Build Team shall analyze spread for all bridges identified in the Structures Scope of Work found elsewhere in this RFP and, as necessary, provide mitigation that adheres to the hydraulic spread requirements noted above. If required, the Design-Build Team shall adhere to the bridge drainage system requirements noted below:
  - The Design-Build Team shall design bridge drainage without the use of Bridge Scuppers (open-grated inlets). If deck drains are used on the bridge, they shall be vertical pipes at the flow line through the deck with no elbow and shall be consistent with that shown in the current NCDOT Stormwater Best Management Practices Toolbox. If a closed drainage system is used on a bridge, the closed drainage system shall use vertical pipes at the flow line through the deck with no elbow and shall be consistent with that shown in the current NCDOT Stormwater Best Management Practices Toolbox.
  - The Design-Build Team shall use 4" deck drains adjacent to pedestrian facilities.
  - The Design-Build Team shall provide bridge drainage features that prevent direct discharge into waterways or onto any existing / future greenway, railway right of way, travel lanes or paved shoulders.
  - The maximum allowable deck drain spacing shall be 12-foot on center.



- For major hydraulic structures in the Walnut Creek stream basin, the Design-Build Team shall use the discharges published in the Preliminary Hydraulics Study For Environmental Impact dated 8/26/2017.
- For major hydraulic structures in the House Creek stream basin, the Design-Build Team shall use the discharges published in the Preliminary Hydraulics Study For Environmental Impact dated 8/26/2017.
- Revise the *Guidelines for Drainage Studies and Hydraulic Design as follows:*
  - Table 7-2, Peak Discharge Method Selection
    - Rational Method is acceptable up to the lower limit of the applicable USGS methods.
    - Delete the NCDOT Hwy. Hydrologic Charts column
  - Delete Appendix C - NCDOT Hydrologic Charts
  - Section 15.6 Temporary Encroachment in Regulatory Floodway
    - Section 15.6 is not applicable on this project. The Design-Build Team shall assume all liability for any flood damages resulting from the temporary encroachment.
- Excluding the following culvert, a minimum 1.5-foot freeboard shall be required below the shoulder point for all existing and proposed box culverts and pipes (including all extensions) during the design storm. The Design-Build Team shall not steepen slopes, reduce easements and / or reduce right of way solely to obtain the aforementioned freeboard requirement.
  - The existing 3 @ 9' x 10' box culvert under the mainline at Walnut Creek
- Excluding the following culverts, a maximum 1.2 HW/D shall be required for all existing and proposed box culverts and pipes (including all extensions) during the design year.
  - The existing 1 @ 8' x 7' box culvert under the mainline at Simmons Branch
  - The existing 1 @ 8' x 7' box culvert under SR 1728 (Wade Avenue) at House Creek
  - The existing 1 @ 8' x 8' box culvert under the mainline at House Creek.
  - The existing 3 @ 9' x 10' box culvert under the mainline at Walnut Creek
- Extensions of the existing 3 @ 9' x 10' box culvert under the mainline at Walnut Creek, will not be permitted. The Design-Build Team shall clean out and remove all accumulated sediment from the existing barrels.
- The Design-Build Team shall remove the existing 1 @ 7' x 5' box culvert under Capital Center Drive at Unnamed Tributary to Walnut Creek. Upon removal of the existing 1 @ 7' x 5' box culvert, the resulting hole in the existing 3 @ 9' x 10' box culvert shall be filled using a method approved by the Structures Management Unit and have a smooth finish.

**Table 1**

<b>Line</b>	<b>Surface</b>	<b>Intermediate</b>	<b>Base</b>	<b>ABC</b>	<b>Stab</b>
Melbourne Road Ramps (-Y20ARA- and -Y20ARD-)	3.0" S9.5C	----	4.0" B25.0C	----	Yes
Western Boulevard Interchange (-Y25-, -Y25E-, -Y25W-, -25RDW-, -25RDE-, -25RCE-, -25RCW-, -25RBE-, -25RBW-, -25RAE-, -25RAW-, -25RD-, -25RA-, -25RB- and -25RC-)	3.0" S9.5C	4.0" I19.0C	4.0" B25.0C	----	Yes
Jones Franklin Road Ramps (-10LA-, -101RC-, -10RD- and -10RA-)	3.0" S9.5C	4.0" I19.0C	4.0" B25.0C	----	Yes
Lake Boone Trail Ramp Widening (-40RA-)	3.0" S9.5C	4.0" I19.0C	4.0" B25.0C	----	Yes
Wade Avenue Widening (-Y35EB- and -Y35WB-)	3.0" S9.5C	3.0" I19.0C	5.5" B25.0C	8.0"	Yes
Wade Avenue Ramp (-353RD-)	3.0" S9.5C	4.0" I19.0C	4.5" B25.0C	----	Yes
Hillsborough Street and Wade Avenue Ramps (-30LA-, -30RA-, -35CDB-, -303LD-, -303RD-, -353CDC-, -353RBD-, -35RBA-, -35RA-, -35LA- and -353LD-)	3.0" S9.5C	4.0" I19.0C	4.0" B25.0C	----	Yes
Barringer Drive, Water's Edge Drive, Fort Sumter Road, Denise Drive / Capital Center Drive, Jones Franklin Road, Athens Drive, Melbourne Road, Powell Drive, Chaney Road, Ligon Street and Vick Charles Drive (-Y06-, -Y07-, -Y08-, -Y09-, -Y10-, -Y15A-, -Y20A- and -Y29C-)	3.0" S9.5B	4.0" I19.0C	4.0" B25.0C	----	No
-SR3-	3.0" S9.5B	2.5" I19.0C	4.0" B25.0C	----	No
-SR6- and -SR7-	3.0" S9.5B	----	4.0" B25.0C	----	No

- For existing concrete driveways, use 6" jointed concrete reinforced with woven wire mesh

The Design-Build Team shall be responsible for the design of all temporary pavements and for the evaluation of existing shoulders and roadways regarding their suitability for carrying traffic during construction, if necessary. In the event that the existing shoulders and / or roadways are found to be inadequate for the proposed temporary traffic volumes and durations, the Design-Build Team shall be responsible for upgrading the pavement to an acceptable level. Temporary pavements shall be designed in accordance with the NCDOT Pavement Design Procedure, AASHTO 1993 Method dated March 16, 2018. Temporary pavement designs and associated calculations shall be submitted for review and acceptance using the Design-Build submittal process prior to incorporation. The expected duration for traffic on temporary pavement must be included as part of the submittal.

Excluding the 1.25" S9.5B drainage later, the rate of application and the maximum and minimum thickness per application and layer shall be in accordance with the NCDOT Roadway Design Manual.

Excluding the high side of superelevated sections, the Design-Build Team shall design and construct continuous median and outside shoulder drains and outlets for the I-440 / US 1 concrete pavement alternate.

Excluding the high side of superelevated sections, the Design-Build Team shall design and construct median and outside shoulder drains and outlets at the locations noted below for the I-440 / US 1 asphalt pavement alternates:

- Throughout crest vertical curves located in cut sections
- Throughout all sag vertical curves
- Where the grade is less than 1%.

Where installed on the outside shoulder, outlets shall be provided approximately every 300 feet. Where installed on the median shoulder, outlet locations shall not exceed 500 feet, and all outlets shall be located at drainage structures. Shoulder drains shall be placed to drain the entire pavement structure. The shoulder drain design and outlet locations shall be submitted to the Design-Build Unit for review and acceptance.

When a resurfacing grade ties to an existing curb, bridge and / or pavement, the Design-Build Team shall perform incidental milling such that the new pavement ties flush with the existing feature(s). When tying to the aforementioned feature(s), the Design-Build Team shall not reduce the minimum required surface layer pavement thickness noted above. At existing pavement ties, the Design-Build Team shall perform incidental milling for a minimum distance of 25 feet at bridges and six feet at curb sections. The Design-Build Team shall not perform incidental milling more than 72 hours prior to placement of the asphalt surface layer.

II. Below is the normal operating frequency and maximum allowable train speeds through the corridor at the proposed project locations. The Design-Build Team shall verify this information with the Railroads. The Design-Build Team shall have no claims whatsoever against either the Railroads or NCDOT for any delays and / or additional costs incurred based on changes to the following information:

Number of trains per day	18-20
Type of trains per day	10-12 Passenger / 8 Freight
Maximum train speed	79 mph Passenger / 60 mph Freight

Railroad inspection and maintenance requirements, in addition to normal train operations, will occur that may also impact construction activities.

III. This Project includes two locations that are in the same Railroad corridor vicinity.

Project U-4437 includes track work and a grade separation of Blue Ridge Road on the NCRR / NSR H-line Corridor between approximate Milepost H-76.0 and H-78.0 and on the CSXT S-line Corridor between approximate Milepost S-160.0 and S-162.0. The NCRR-owned rail corridor is considered oriented east / west with mileposts increasing from west to east. The H-line track is leased and operated by NSR. The S-line track is owned by CSXT and is oriented as a north / south railroad with mileposts increasing from north to south. At this location, the corridor contains two main tracks and two locations with a third siding track (on either sides of Blue Ridge Road.) 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. The Design-Build Team shall design and construct new bridges and new track alignments to carry the existing two (2) tracks (one NCRR / NSR and one CSXT) plus one (1) future track on the NSR side and substructure for (1) future track on the CSXT side. (Reference the Structures Scope of Work found elsewhere in this RFP) Tracks shall be designed with 14-foot minimum track centers in accordance with NSR and NCRR standards, plus any additional separation required for curvature in accordance with NSR and CSXT track design standards. The Design Build Team shall design and construct the temporary detour tracks in order to maintain existing levels of train service. The Design-Build Team shall design and construct the roadbed grade, structures, slopes and drainage required for the two temporary and permanent tracks. Trainman’s walkways with handrails shall be provided on each side of the proposed underpass bridges. Any permanent track realignment shall accommodate a maximum operating speed of 90 mph passenger / 60 mph freight with any detour track alignments accommodating a maximum operating speed of 79 mph passenger / 60 mph freight.

NCDOT has coordinated the proposed temporary and permanent railroad track geometry with the Railroads and the approved alignments will be provided to the

Design-Build Team. The alignments identify curvature, spiral lengths, superelevation and will include track profiles with vertical curvature. In addition to CSXT, NSR and NCRR track design requirements, proposed permanent main track alignments shall also meet the following requirements, unless a design exception is approved by CSXT, NSR and NCRR, as well as the NCDOT via the NCDOT's Design-Build Unit. Should the Design-Build Team wish to deviate from the alignments provided, they should follow the criteria below:

1. Horizontal curvature shall be designed to maintain 90 mph passenger / 60 mph freight with a desirable maximum of 4" unbalanced superelevation and an absolute maximum of 5" unbalanced superelevation, with a two mile per hour (MPH) buffer, as in the formula below:

$$V = \sqrt{\frac{E_a + E_u}{0.0007D}} - 2$$

Where:

- V = design speed (miles per hour)
- E<sub>a</sub> = actual superelevation (inches)
- E<sub>u</sub> = unbalanced superelevation (inches)
- D = degree of curvature (chord definition)

2. Desirable track centers, as given in NS Plan 7-2C, shall be maintained throughout the body of all horizontal curves.
3. Spiral lengths shall meet AREMA minimum standards for 90 mph passenger / 60 mph freight, or NSR Plan 7-2, whichever produces the longer length of spiral for the NCRR / NSR track. Spiral lengths shall meet AREMA minimum standards for 90 mph passenger / 60 mph freight, or CSXT Plan 2511, whichever produces the longer length of spiral for the CSXT track.
4. The minimum length of tangent track between reverse curves for main tracks shall be 220 feet unless otherwise approved by the NSR, NCRR, CSXT and NCDOT. The desirable length of the tangent segment between reverse curves is 270 feet. Any tangent section 220 feet to 269 feet long shall require justification and approval.
5. The maximum degree of curvature shall be 1 degree 30 minutes for permanent main tracks.
6. The maximum actual superelevation shall be three inches for temporary tracks and two inches for permanent tracks.

Project U-2719 includes the replacement of existing overhead highway bridges on the NCRR / NSR H-line Corridor at approximate Milepost H-77.8 and on the CSXT S-line Corridor at approximate Milepost S-160.2. The NCRR-owned rail corridor is considered oriented east / west with mileposts increasing from west to east. The H-line track is leased and operated by NSR. The S-line track is owned by CSXT and is oriented as a north / south railroad with mileposts increasing north to south. At this location, the corridor contains two main tracks and one

**STRUCTURES SCOPE OF WORK** (7-20-18)**Project Details**

The Design-Build Team shall design and construct all structures necessary to complete the project, including but not limited to, the following:

- Bridge on SR 1319 (Jones Franklin Road) Over the Mainline
- Bridge on Athens Dr. over the Mainline
- Bridge on Melbourne Road over the Mainline
- Bridge(s) on the Mainline over SR 1012 (Western Boulevard)
- Bridge on Ligon Street over the Mainline
- Bridge on -35CDB- over Beryl Road, NCR, NSR, CSXT, Siding Track, and NC 54 (Hillsborough Street)
- Bridge(s) on the Mainline over Beryl Road, NCR, NSR, CSXT, Siding Track, and NC 54 (Hillsborough Street)
- Bridge on -353CDC- over Beryl Road, NCR, NSR, CSXT, Siding Track, and NC 54 (Hillsborough Street)
- Bridge(s) on the Mainline over SR 1728 (Wade Avenue)
- Bridge on -35LA- and -35CDB- over SR 1728 (Wade Avenue)
- Bridge on -353RBD- over -35CDB-, the Mainline, -353CDC-, SR 1728 (Wade Avenue), Moore Drive / SR6 and Greenway
- Pedestrian bridge on -G10- over -SR6- and -G8-
- Bridge on Beryl Road over Blue Ridge Road
- Bridge on NSR over SR 1664 (Blue Ridge Road)
- Bridge on CSXT over SR 1664 (Blue Ridge Road)
- Bridge on NC 54 (Hillsborough Street) over SR 1664 (Blue Ridge Road)
- All retaining walls required by the Design-Build Team's design
- All sound barrier walls required by the Design-Build Team's design (Reference the Roadway Scope of Work found elsewhere in this RFP)
- All reinforced concrete box culverts / reinforced concrete box culvert extensions required by the Design-Build Team's design

All bridges shall meet the approved roadway typical sections and grades. Bridge geometry (width, length, skew, span arrangement, etc.) shall be in accordance with the accepted Structure Recommendations and / or the accepted Hydraulic Bridge Survey Report prepared by the Design-Build Team.

The Design-Build Team shall design and construct approach slabs for all roadway bridges that adhere to the requirements noted below:

- All approach slabs shall be designed and constructed to adhere to the Department's current approach slab length requirements.
- High early strength concrete shall not be used for any approach slab.
- A temporary asphalt approach slab may only be utilized for widened bridges during temporary traffic configurations.

- Modular expansion joints
- Monotube or cantilever DMS (if required on project) support structures

### **Pedestrian Bridge**

The pedestrian bridge on -G10- over -SR6- and -G8- shall be designed and constructed in accordance with the AASHTO *LRFD Guide Specifications for the Design of Pedestrian Bridges*.

The pedestrian bridge shall have a minimum 10'-0" clear width and a concrete deck. Protective fencing shall be included for the protection of traffic below the bridge. The pedestrian bridge shall be designed and constructed for a maintenance vehicle load. The Design-Build Team will not be required to design or construct approach slabs or bridge approach fills for the pedestrian bridge. The pedestrian bridge shall have a minimum 15'-6" vertical clearance over -SR6-.

### **Removal of Existing Structures**

In accordance with the 2018 *Standard Specifications for Roads and Structures*, the Design-Build Team shall remove and dispose of the following existing structures:

- Bridge 910185 on SR 1319 (Jones Franklin Road) over the Mainline
- Bridge 910197 on Athens Dr. over the Mainline
- Bridge 910203 on Melbourne Road over the Mainline
- Bridges 910210 and 910211 on the Mainline over SR 1012 (Western Boulevard)
- Bridge 910218 on SR 1012 (Western Boulevard) flyover over the Mainline
- Bridge 910223 on the Mainline over Beryl Road, NCRR, NSR, CSXT, Siding Track, and NC 54 (Hillsborough Street)
- Bridges 910238 and 910239 on the Mainline over SR 1728 (Wade Avenue)

In accordance with the *Asbestos Assessment for Bridge Demolition and Renovation Activities* Project Special Provision located on the Structures Management Unit's website, the Design-Build Team is cautioned that all the aforementioned bridges require an asbestos survey / inspection prior to demolition.

The Design-Build Team is cautioned that all the aforementioned bridges may be coated with red lead paint. In accordance with the 2018 *Standard Specifications for Roads and Structures*, the Design-Build Team shall handle, remove, ship, and dispose of all red lead painted elements.

The Design-Build Team may remove and dispose of or fill the existing culvert on Ligon Street under the Mainline.

### **Box Culverts**

As required by the Design-Build Team's design, the Design-Build Team shall design and construct all proposed reinforced concrete box culverts and lengthen or replace all existing reinforced concrete box culverts. Reinforced concrete box culvert designs shall be in accordance with the latest edition of the AASHTO *LRFD Bridge Design Specifications* and the Hydraulic Culvert Survey Reports prepared by the Design-Build Team and accepted by the Department. (Reference the Hydraulics Scope of Work found elsewhere in the RFP)

A live load rating chart for reinforced concrete box culverts and reinforced concrete box culvert extensions shall be included in the culvert plans. A live load rating chart will not be required for the existing section of reinforced concrete box culverts that are extended.

- NCDOT *Standard Specifications for Roads and Structures*
- NCDOT *Standard Roadway Drawings*
- ITS & Signals Unit Project Special Provisions
- ITS & Signals Unit Design Manual
- *Manual on Uniform Traffic Control Devices (MUTCD)*
- *North Carolina Supplement to the Manual on Uniform Traffic Control Devices (NCMUTCD)*
- *Guidelines for the Preparation of ITS & Signal Plans by Private Engineering Firms*
- Traffic Systems Operations’ Project Special Provisions - (Special Provisions for the Preparation of Coordinated Traffic Signal System Timing Plans – Version 2011.1)

Links to additional ITS & Signals Unit design standards and aides are available on website noted below:

<https://connect.ncdot.gov/resources/safety/Pages/ITS-and-Signals.aspx>

**II. TRAFFIC SIGNALS**

Unless allowed otherwise or elsewhere in this RFP, the Design-Build Team shall provide nine (9) new traffic signals and modify nine (9) existing traffic signals. All of these signals shall be interconnected as noted in the tables below. (Reference Section III for the system interconnection requirements.) The traffic signal detection for the final traffic patterns shall be inductive loop detection. The Design-Build Team may provide video detection only for temporary traffic patterns during construction. Unless allowed otherwise elsewhere in this RFP, the required traffic signal work and signal communications for each intersection are listed below:

<b>NCDOT- SR 1319 (Jones Franklin Road) Proposed Signal</b>		
<b>Signal Inventory Number</b>	<b>Intersection Description</b>	<b>Work Requirements</b>
<b>05-TBD (NEW)</b>	SR 1319 (Jones Franklin Road) at Denise Drive and Wood Aisle Road	<p>The Design-Build Team shall design and install a new, fully actuated traffic signal with 2070E controllers operating SE-PAC Software in a 170 cabinet with an auxiliary output file, including base extender.</p> <p>The Design-Build Team shall provide Flashing Yellow Arrow signal heads at all protected / permissive and permissive left turn movements, including time of day phasing options, as appropriate.</p> <p>The Design-Build Team shall install new galvanized metal strain poles with span wire at this location.</p> <p>The Design-Build Team shall provide crosswalks and <b>pedestrian signal heads</b> at each approach with existing or proposed sidewalk.</p> <p>The Design-Build Team shall incorporate this signal into the Raleigh Signal System. See Section III for signal communication requirements for both temporary and permanent operations.</p>



<b>Utility Owner</b>	<b>Utility Type</b>	<b>Cost Responsibility</b>
AT&T	Telecommunications	AT&T
Celito Clec	Communications	Celito Clec (normally)
CenturyLink	Communications	CenturyLink
City of Raleigh Fiber	Communications	City of Raleigh
City of Raleigh Public Utilities	Water & Sewer	Design-Build Team
Crown Castle	Communications	Crown Castle
Duke Energy	Power	NCDOT (normally)
Earthlink	Communications	Earthlink (normally)
Level 3	Communications	Level 3
Google Fiber	Communications	Google Fiber (normally)
MCI	Communications	MCI (normally)
MCNC	Communications	NCDOT (normally)
PSNC	Gas	PSNC (normally)
Spectrum	Communications	Spectrum (normally)
NCSU	Communications	Design-Build Team (Duct Bank)

### **Water and Sewer**

If the Design-Build Team's design and / or construction requires the relocation and / or encasement of existing water and / or sewer facilities, designs shall be coordinated with the NCDOT Utilities Unit. All costs associated with the design and construction for relocation and / or encasement of these existing water and / or sewer facilities shall be the responsibility of the Design-Build Team and shall be included in the lump sum bid for the project. The Design-Build Team shall develop designs; prepare all plans for needed agreements and permits; submit permits directly to the agencies and obtain approval from the agencies. The Design-Build Team shall be responsible for all permit fees.

The Design-Build Team shall not impact the City of Raleigh water tank or water valve vault located on the east side of SR 1664 (Blue Ridge Road).

For all parcels with access to existing water and / or sewer facilities that the project subdivides, the Design-Build Team shall design and construct water / sewer facility extensions to all sub-divided parcels, including but not limited to the sub-divided parcel with the existing water / sewer access, if necessary. The aforementioned water facility extensions shall be installed completely within the right of way. The aforementioned sewer facility extensions shall be installed completely within the right of way or a recorded easement. All costs associated with the