



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PAT MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

February 20, 2014

**Addendum No. 4**

Contract No.: C 203433  
TIP No.: I-5110, R-2413A & R-2413B  
County: Guilford  
Project Description: TIP Nos.: I-5110, R-2413A and R-2413B (Guilford County)  
Future I-73 from the existing Joseph M. Bryan Boulevard (SR 2085) /  
Airport Parkway interchange to south of US 220 near the Haw River

RE: Addendum No. 4 to Final RFP

**March 27, 2014 Letting**

To Whom It May Concern:

Reference is made to the Final Request for Proposals with Addendum No. 1 dated January 14, 2014 recently furnished to you on the above project. We have since incorporated changes and have attached a copy of Addendum No. 4. Please note that all revisions have been highlighted in gray and are as follows:

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

Page Nos. 39 and 40 of the *Project Special Provisions* have been revised. Please void Page Nos. 39 and 40 in your proposal and staple the revised Page Nos. 39 and 40 thereto.

Page Nos. 148 and 150 of the *Roadway Scope of Work* have been revised. Please void Page Nos. 148 and 150 in your proposal and staple the revised Page Nos. 148 and 150 thereto.

Page Nos. 158 and 159 of the *Structures Scope of Work* have been revised. Please void Page Nos. 158 and 159 in your proposal and staple the revised Page Nos. 158 and 159 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

WEBSITE: [WWW.NCDOT.GOV](http://WWW.NCDOT.GOV)

**LOCATION:**  
CENTURY CENTER COMPLEX  
ENTRANCE B-2  
1020 BIRCH RIDGE DRIVE  
RALEIGH NC

TIP I-5110/R-2413A&B  
Addendum No. 4 to Final RFP  
Page 2

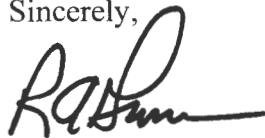
Page No. 192 of the *Transportation Management Scope of Work* has been revised. Please void Page No. 192 in your proposal and staple the revised Page No. 192 thereto.

Page Nos. 205 and 206 of the *Utilities Scope of Work* have been revised. Please void Page Nos. 205 and 206 in your proposal and staple the revised Page Nos. 205 and 206 thereto.

Page No. 212 of the *ITS Scope of Work* has been revised. Please void Page No. 212 in your proposal and staple the revised Page No. 212 thereto.

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

Sincerely,

A handwritten signature in black ink, appearing to read 'R.A. Garris', with a stylized flourish at the end.

R.A. Garris, PE  
State Contract Officer

RAG/kbc

cc: Mike Mills, PE  
Rodger Rochelle, PE  
Victor Barbour, PE  
Teresa Bruton, PE  
Lonnie Brooks, 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  
 Intermediate Contract Time Number 9 and Liquidated Damages .....2  
 Other Liquidated Damages and Incentives .....2  
 Funding Differentiation .....3  
 Payout Schedule.....4  
 Mobilization.....4  
 Substantial Completion.....5  
 Submittal of Quantities, Fuel Base Index Price and Opt-Out Option.....5  
 Individual Meeting with Proposers .....7  
 Execution of Bid, Non-Collusion Affidavit, Debarment Certification,  
 and Gift Ban Certification.....7  
 Submission of Design-Build Proposal .....8  
 Alternative Technical Concepts and Confidential Questions .....8  
 Value Analysis .....13  
 Schedule of Estimated Completion Progress .....13  
 Disadvantaged Business Enterprise .....13  
 Certification for Federal-Aid Contracts .....26  
 Contractor’s License Requirements .....27  
 U. S. Department of Transportation Hotline.....27  
 Resource Conservation .....27  
 Subsurface Information.....28  
 Domestic Steel .....28  
 Cooperation between Contractors .....28  
 Bid Documentation .....28  
 Twelve Month Guarantee .....32  
 Erosion & Sediment Control / Storm Water Certification.....33  
 Procedure for Monitoring Borrow Pit Discharge.....38  
**E-Verify Compliance** .....38  
 FAA Notification of Construction .....40  
 Clearing and Grubbing.....40  
 Burning Restrictions .....40  
**Building and Appurtenance Removal / Demolition**.....40  
 Pipe Installation .....41  
 Reinforced Concrete Pipe Design .....41  
 Drainage Pipe .....43  
 Cement and Lime Stabilization of Sub-Grade Soils .....43  
 Cement Treated Base Course .....47  
 Price Adjustments for Asphalt Binder .....49  
 Price Adjustments - Asphalt Concrete Plant Mix .....49  
 Dynamic Message Sign .....49

CCTV Field Equipment .....	86
Foundations and Anchor Rod Assemblies for Metal Poles .....	94
Overhead Sign Supports .....	100
Overhead and Dynamic Message Sign Foundations .....	107
Automated Machine Guidance .....	109
Log Cross Vane.....	110
Rock Cross Vane.....	111
Constructed Riffle.....	112
Rootwad .....	113
Rock A-Vane .....	114
Log Vane.....	114
Stream Plug.....	115
Log Sill.....	116
Natural Rock Energy Dissipater .....	117
Boulder Toe Protection .....	117
Structure Stone.....	118
Site Grading .....	119
Construction Surveying for Mitigation.....	119
Rock Vane.....	120
Pump Around Operation .....	121
Impervious Select Material .....	121
Contractor Requirements for Stream Relocations, Restorations, And Enhancements .....	122
Geotextile For Pavement Stabilization .....	123
<b>GENERAL</b> .....	125
<b>SCOPES OF WORK</b>	
Roadway .....	142
Pavement Management.....	152
Structures .....	158
Geotechnical Engineering.....	162
Hydraulics .....	172
GeoEnvironmental .....	176
Signing .....	178
Transportation Management .....	184
Utilities Coordination.....	201
ITS.....	209
Traffic Signals.....	217
Right of Way.....	224
Erosion and Sedimentation Control .....	229
Public Information .....	242
Environmental Permits.....	245
On-Site Mitigation .....	252
Lighting.....	256
Pavement Markings .....	257

Sampling locations shall include points upstream and downstream from the point at which the discharge enters these waters. Upstream sampling location shall be located so that it is not influenced by backwater conditions and represents natural background conditions. Downstream sampling location shall be located at the point where complete mixing of the discharge and receiving water has occurred.

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

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

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

**[http://www.ncdot.gov/doh/operations/dp\\_chief\\_eng/roadside/fieldops/downloads/Files/TurbidityReductionOptionSheet.pdf](http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/fieldops/downloads/Files/TurbidityReductionOptionSheet.pdf)**

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

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

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

### **E-VERIFY COMPLIANCE**

(2-17-14)

DB1 G200

The Design-Build Team shall comply with the E-Verify requirements of N.C.G.S. Chapter 64, Article 2. The Design-Build Team is directed to review the foregoing laws. By signing this Price Proposal, any awarded Design-Build Team certifies its compliance with the E-Verify requirements and will do so on a periodic basis thereafter as may be required by the Department.

**FAA NOTIFICATION OF CONSTRUCTION**

The Design-Build Team shall adhere to the requirements of the FAA *Operational Safety On Airports During Construction* Advisory Circular and the Concord Airport Authority Safety Program. The Design-Build Team shall notify the Federal Aviation Administration (FAA) and the Piedmont Triad Airport Authority in writing sixty days prior to any construction activities on the project, at the following addresses:

**FAA**  
Jennifer M. Fuller, P.E., Airport Project Manager  
NCDOT Division of Aviation  
jmf Fuller@ncdot.gov  
http://ncdot.org/aviation  
Telephone: 919-840-0645

**Piedmont Triad Airport Authority**  
Kevin Baker, Executive Director  
Piedmont Triad International Airport  
P.O. Box 35445  
Greensboro, NC 27425  
Telephone: 336-665-5600

The Design-Build Team shall be responsible for all work and costs associated with the FAA forms and approvals required for construction of the project. This shall include, but is not limited to, preparation and submittal of forms 7460-1 and 7460-2. These forms, instructions and examples of previous DOT projects can be found at the website listed above.

**CLEARING AND GRUBBING**

(9-1-11)

DB2 R01

With the exception of areas with Permanent Utility Easements, perform clearing on this project to the limits established by Method "III" shown on Standard No. 200.03 of the 2012 *NCDOT Roadway Standard Drawings*. In areas with Permanent Utility Easements, clearing shall extend to the Right of Way limits.

**BURNING RESTRICTIONS**

(7-1-95)

DB2 R05

Open burning is not permitted on any portion of the right of way limits established for this project. The Design-Build Team shall not burn the clearing, grubbing or demolition debris designated for disposal and generated from the project at locations within the project limits, off the project limits or at any waste or borrow sites in Guilford County. The Design-Build Team shall dispose of the clearing, grubbing and demolition debris by means other than burning and in accordance with state and local rules and regulations.

**BUILDING AND APPURTENANCE REMOVAL / DEMOLITION**

(9-1-11)

DB2 R12A

Excluding the parcels noted below, the Department has demolished all of the buildings and appurtenances on the parcels acquired by the Department, as shown on the R-2413A and R-2413B Right of Way Plans provided by the Department.

- Parcel No. 14 on R-2413A - The Department will demolish the buildings and appurtenances on Parcel No. 14 by August 4, 2014.
- Parcel Nos. 7, 8, 19, 12, 24 and 24A on R-2413B – Prior to the date of availability, the Department will demolish the buildings and appurtenances on Parcel Nos. 7 and 8. The Department will demolish the buildings and appurtenances on Parcel Nos. 19, 12, 24 and 24A by August 4, 2014.

Excluding Parcel No. 950, the Design-Build Team shall be responsible for the demolition of all buildings and appurtenances on all parcels acquired for I-5110. Prior to the Date of Availability, the Department will demolish the buildings and appurtenances on Parcel No. 950. The Department will also investigate and remove any hazardous materials from Parcel No. 975 such that the buildings and appurtenances are ready for demolition by the Design-Build Team no later than July 1, 2014.

- At all intersections, the Design-Build Team shall provide a maximum 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.
- A sag vertical curve low point will not be allowed on any proposed bridge or approach slab.
- Excluding grades required solely to tie to existing, the minimum longitudinal grade shall be 0.30%.
- The Design-Build Team shall design and construct all driveways that adhere to the minimum requirements noted below:
- The Design-Build Team shall provide horizontal and vertical alignments for all driveways that require 100 feet or longer to tie to existing.
  - Excluding steeper grades required solely to tie to existing, the maximum driveway grade shall be 10%.
  - For shoulder sections, the minimum driveway turnout for residential and commercial properties shall be 16'-0" and 24'-0", respectively, or the existing width, whichever is greater.
  - For curb and gutter sections, the minimum driveway turnout for residential and commercial properties shall be 20'-0" and 28'-0", respectively, or the existing width, whichever is greater.
- The Design-Build Team shall contact Mr. Gary W. Thompson, North Carolina Geodetic Survey Director, prior to disturbing any geodetic monuments.
- The project shall follow the NCDOT-FHWA Oversight Agreement. Any changes that affect previous approvals shall be re-submitted by the Design-Build Team for FHWA acceptance.
- The Design-Build Team shall identify the need for any special roadway design details (i.e. any special drainage structures, rock embankment, rock plating, special guardrail, retaining walls, concrete barrier designs, etc.) and shall provide special design drawings. The Contract Standards and Development Unit may have special details available that can be provided to the Design-Build Team upon request.
- The Design-Build Team shall design and construct bridge rail offsets wider than the minimum widths noted below to provide adherence to all other design requirements, including but not limited to hydraulic spread and sight distance requirements: (The bridge rail offsets will not be required to exceed 12 feet to accommodate sight distance requirements.)
  - For structures on the mainline, the minimum bridge rail offsets shall be as indicated in the NCDOT *Roadway Design Manual* or be equal to the approach roadway paved shoulders, whichever is greater. Narrower bridge rail offsets, based on bridge length, will not be allowed for structures on the mainline.

speed plus five-mph. Excluding Deboe Road (-Y7-), if a speed limit is not physically posted on an existing facility General Statutes mandate the speed limit as 55 mph, resulting in a 60 mph design speed. The Design-Build Team shall design and construct Deboe Road (-Y7-) to meet a 50 mph design speed.

- Functional classifications that have a defined usable shoulder width shall have the appropriately wider overall shoulder width.
- The Design-Build Team shall be responsible for the evaluation of the algebraic difference in rates of cross slope (roll-over) between existing shoulders and roadways and the associated suitability for carrying traffic during construction, if necessary. In the event that the roll-over is found to be unacceptable for the proposed temporary traffic patterns, the Design-Build Team shall provide cross slopes that meet design standards and eliminate roll-over concerns.
- At all intersections impacted by the Design-Build Team's design and / or construction methods, excluding resurfacing, the following design vehicles shall be required for all turning movements:
  - WB-67 at all ramp / loop intersections with -Y- Lines (For side-by-side turning maneuvers, WB-67 for the outside movement only and SU-30 for inside movement)
  - WB-62 at all other intersections
- Unless noted otherwise elsewhere in this RFP, all roundabout(s) shall adhere to the design and operation parameters as detailed in *Roundabouts: An Informational Guide*, Second Edition (NCHRP Report 672). Prior to incorporation, the Design-Build Team shall provide a traffic analysis of the proposed roundabout(s), utilizing the 2035 projected traffic volumes and SIDRA Intersection 5.1 analysis software, for NCDOT review and approval. All roundabouts shall be designed and constructed to accommodate a WB-67.
- A minimum four-foot 6:1 back slope shall extend from the back of all expressway gutter. From the end of the aforementioned four-foot back slope to the limits of the vehicle recovery area, the back slope shall not exceed 4:1. Beyond the vehicle recovery area, the back slope shall not exceed the maximum allowable slope noted elsewhere in this RFP.

### **NCDOT Information Supplied**

- The NCDOT will provide copies of the R-2413 State Environmental Assessment, R-2413 State Finding of No Significant Impact, R-2413 Re-evaluation, I-5110 Environmental Assessment, I-5110 Finding of No Significant Impact, consultations, the latest list of environmental commitments and all pertinent approvals and correspondence. Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall adhere to all commitments stated in these environmental documents.
- The NCDOT will provide electronic surveys to the Design-Build Team. Any supplemental surveys, including but not limited to additional topography, existing and proposed roadway, structure sites, underground and overhead utilities, existing and proposed drainage, wetland delineation, right of way, parcel names, and deed research and descriptions shall be the responsibility of the Design-Build Team to acquire and process. The Design-Build Team shall modify / incorporate boundary information used for the determination and valuation of property solely under the direct supervision of a Professional Land Surveyor registered in North Carolina. Known existing utilities have been located and will be included with the survey data. The Design-Build Team shall be responsible for confirming the location of the



**STRUCTURES SCOPE OF WORK** (2-19-14)

**Project Details**

The Design-Build Team shall be responsible for all structures necessary to complete the project, including at the following locations:

- Taxiway Bridge over -L-
- Dual Bridges on -L- over NC 68 and re-aligned Pleasant Ridge Road (SR 2133)
- Flyover Bridge over -L- and NC 68
- Dual Bridges on -L- over NC 68 between Edgefield Road and Leabourne Road
- Bridge on Ramp RP1B over re-aligned Pleasant Ridge Rd.
- Grade separation bridge(s) at Alcorn Road (SR 2269) and -L-
- Grade separation bridge(s) at Bunch Road (SR 2128) and -L-
- Dual Bridges on -L- over Reedy Fork Creek
- Grade separation bridge(s) at Brookbank Road (SR 2127) and -L-
- Grade separation bridge(s) at Oak Ridge Road (NC 150) and -L-
- Grade separation bridge(s) at Deboe Road (SR 2155) and -L-
- All reinforced concrete box culverts required by the Design-Build Team’s design
- Pedestrian Culverts (two locations)
- All retaining walls as required by the Design-Build Team’s design

**Department-Provided Sealed Structural Drawings**

The Department will provide sealed structural drawings for the structures at the following locations:

- Dual Bridges on -L- over Reedy Fork Creek
- Six reinforced concrete box culverts (including two pedestrian culverts)

**\*\* NOTE \*\*** Deleted bullet on anticipated date of sealed structural drawings

In the event the Design-Build Team chooses to modify the sealed structural plans provided by the Department, adherence to all guidelines / requirements stated, or included by reference, in this Request for Proposals shall be required. The Design-Build Team may redesign the dual bridges on -L- over Reedy Fork Creek to reduce the 12-foot median rail offsets to six feet, provided the aforementioned guidelines / requirements are adhered to, included but not limited to hydraulic spread and sight distance requirements. (The bridge rail offsets will not be required to exceed 12 feet to accommodate sight distance requirements.)

For the dual bridges on I-73 over Reedy Fork Creek, the minimum horizontal and vertical clearances shall be the greater of the following:

- On the south side of the creek, the vertical clearance for the required 14-foot natural surface and 14-foot stabilized trail shall be 15 feet, as measured from the existing natural ground surface.
- On the north side of the creek, the vertical clearance provided for the required 14-foot natural surface shall be ten feet, as measured from the existing natural ground surface.
- The horizontal and vertical clearances shall adhere to all hydraulic conveyance requirements. (Reference the Hydraulics Scope of Work found elsewhere in this RFP)

For all provided sealed plans, the Design-Build Team is encouraged to construct according to these plans. The Design-Build Team may choose to modify these designs. In such case, the Design-Build Team shall assume full responsibility for the design of that work item and submit signed and sealed plans for Department review and approval. Intentions to do so must also be clearly noted in the Technical Proposal. Submittals for such design changes will be required to follow the Design-Build Submittal Guidelines as expected for other current Design-Build projects. No additional compensation will be provided and no extension of contract time will be granted due to the Design-Build Team’s election to modify the sealed plans provided by the Department.

For the provided sealed Structural plans, the Design-Build Team shall coordinate revisions due to any plan errors with the Engineering Firm of Record through the Director of the Transportation Program Management. The Department is responsible for the accuracy and completeness of all signed and sealed plans provided by the Department and shall be fully liable for any additional costs due to errors in these plans; however, the Design-Build Team shall be responsible for examining the sealed plans and developing their own quantities to use in the formulation of their Price Proposal. No additional compensation will be provided as a result of an error or omission in the Structural plan quantities unless such a quantity error or omission is due to an error in the design or the sealed drawings.

### **Taxiway Bridge**

The proposed Piedmont Triad International Airport taxiway bridge shall be fully constructed as part of this project. At a minimum, the bridge shall adhere to the following requirements:

- The design of the substructure and superstructure shall be in accordance with all Federal Aviation Administration Advisory Circulars, Orders and Notices. The bridge shall be designed for Airplane Design Group VI loading and Airplane Design Group V geometry.
- A fleet growth factor will not be required in the bridge design.
- Design criteria shall include, as a minimum, an impact factor of 30% and braking factor of 70% of gross weight. Design criteria shall also include a wind on live load applied to an assumed 5,000 sf surface area with the loading centroid located 17 ft. above the bridge deck and a wind load on the structure of 50 psf.
- A single bridge shall be constructed to cross Future I-73 as well as an access road on the south side of Future I-73 adjacent to the airport. The access road (to be constructed in the future) will have two 12 foot lanes and 6 foot shoulders. The bridge shall have a clear width of 214 feet.
- Retaining walls will be permitted in front of the taxiway end bents/abutments.
- The median pier shall be located such that two additional lanes with standard median shoulders in each direction can be constructed in the future without the need for a future design exception, except as allowed by the Roadway Scope of Work found elsewhere in this RFP.
- The maximum grade allowed is 1.5% along the length of the taxiway bridge.
- The location, elevations, and alignment shall be in accordance with the Future Development Plan Taxiway Bridge over I-73 drawings dated August 2013 provided by the Department. Any revision to the location, skew, or alignment must be through an approved Alternate Technical Concept.
- The Design-Build Team shall anticipate close coordination with the Piedmont Triad International Airport to ensure that the bridge design satisfies the required design specifications and location, elevations, etc. to coincide with the future taxiway.
- The approach to the taxiway bridge shall be graded and seeded to a distance of 50' beyond the approach slabs or to the NCDOT right of way line, whichever is greater.
- Taxiway bridge approach slabs are required and shall be 30' in length as measured along the taxiway alignment.
- Conduits and cans for future lighting on the taxiway bridge shall be provided. The conduit shall be stubbed out 5 feet beyond the approach slab. Each conduit shall be 2"

**2. Intermediate Contract Times #3 for SR 2085 (Joseph M. Bryan Blvd.) and NC 68, including ramps and loops for Road Closure Restrictions for Girder Installation**

Unless permitted otherwise elsewhere in this Scope of Work, at a minimum, the Design-Build Team shall maintain the existing traffic pattern on **SR 2085 (Joseph M. Bryan Blvd.), and NC 68** and follow the road closure restrictions listed below. The Design-Build Team will be allowed to use road closures and offsite detours while installing girders over **SR 2085 (Joseph M. Bryan Blvd.) and NC 68**. When a road closure is used, the Design-Build Team shall provide an offsite detour and shall reopen the travel lanes by the end of the road closure duration. The Design-Build Team shall use offsite detours that are approved by the Department.

The Design-Build Team shall not close to traffic the following roads during the times noted below. Closure of these roads shall only be allowed for **girder installation** over these roads.

Road Name	Day	Time Restrictions
<b>SR 2085 (Joseph M. Bryan Blvd.) and NC 68 including ramps and loops</b>	<b>Monday through Sunday</b>	<b>5:00 a.m. until 12:00 a.m. (midnight)</b>

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

**Liquidated Damages for Intermediate Contract Time #3 for the above road closure time restrictions for NC 68 and SR 2085 (Joseph M. Bryan Blvd.) are \$1000.00 per 15-minute period or any portion thereof.**

**3. Intermediate Contract Times #4 for SR 2085 (Joseph M. Bryan Blvd.), NC 68, I-85, I-73, US 220, and US 421 including ramps and loops for Road Closure Restrictions for Construction Operations**

At a minimum, the Design-Build Team shall maintain the existing traffic pattern on **SR 2085 (Joseph M. Bryan Blvd.), NC 68, I-85, I-73, US 220, and US 421**; and follow the road closure restrictions listed below, unless permitted otherwise elsewhere in this Scope of Work. When a 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.

The Design-Build Team shall not close any direction of travel on the following roads during the times noted below. Closure of these roads shall only be allowed for the installation of **girders, overhead sign assemblies over travel lanes, and traffic shifts**. Maximum road closure duration of **thirty (30) minutes** shall be allowed for the roadways listed below:

Once the Design-Build Team and the Agency / Utility Owner agree on a plan and a lump sum estimated cost for the utility construction, the Design-Build Team shall be responsible for submitting five (5) sets of 11 x 17 utility construction drawings to the State Utility Agent, via the Transportation Program Management Director, for further handling. Each set shall include a title sheet, plan sheets, profiles and special provisions if required. Also, a letter from the Agency / Utility Owner agreeing to the plans and lump sum cost must accompany this package. The NCDOT will reimburse the Design-Build Team the estimated lump sum cost under a Supplemental Agreement. The necessary Utility Agreement to the Agency / Utility Owner for reimbursement shall be a two party agreement between the NCDOT and the Agency / Utility Owner; and will be developed and executed by the Department.

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

### **Cable TV**

The cost in relocating CATV due to the highway construction shall be the responsibility of the CATV Company; however, under the following conditions the Design-Build Team shall bear the relocation expense:

- (A) If the CATV Company can validate a recorded easement for facilities outside the maintained NCDOT rights of way.
- (B) The adjustment is needed on existing utility poles to accommodate a proposed NCDOT Traffic Management System Fiber Optic Communication Cable Project.

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

### **Communication Cables / Electrical Services for Lighting, Signals and ITS Devices:**

Prior to establishing the location for new meter poles, the Design-Build Team shall coordinate with the local Power Distribution Company concerning accessibility of E/C service and safety in maintenance of the meter.

Prior to installation, the Design-Build Team shall provide plans for review and approval for all service taps that require a parallel installation within the C/A.

Parallel service installation within a C/A shall be buried and located as close to the R/W line as practical. Only due to unusual circumstances will parallel aerial service installations within C/A be allowed. The Design-Build Team shall justify the allowance of parallel aerial service installation and obtain NCDOT approval prior to installation

The Design-Build Team shall be responsible for all coordination activities, including deposit fees, required for the utility company to provide service taps. Prior to the Design-Build Team developing the associated design and / or instructing the utility company to proceed with providing the service taps, the Design-Build Team shall obtain written approval of the service tap locations from the Resident Engineer. The Design-Build Team shall apply and pay for all fees associated with all electrical permits and inspections required by the utility companies. The Department will be responsible for construction costs associated with the utility company providing service taps. The Design-Build Team will not be granted contract time extensions or additional compensation for delays associated with the utility company providing service taps.

**Adjusting Existing Utilities due to Proposed Traffic Management Systems Fiber Optic Communications Cables:**

The Design-Build Team shall be responsible for all coordination activities required for the utility company to adjust or relocate existing facilities to accommodate the proposed ITS and / or signal communication cables. Prior to developing the associated designs and / or instructing the utility company to proceed with the design / and or construction required to adjust / relocate facilities, the Design-Build Team shall obtain written approval from the Resident Engineer.

**Requirements for attachments to existing and / or proposed structures**

The Design-Build Team shall avoid attachments to structures where feasible. Attachments shall only be considered when other alternatives are cost prohibitive and / or are not feasible due to environmental or geographical features. Attachments shall be prohibited under the following conditions:

- (A) Unless noted otherwise elsewhere in this RFP, no attachments shall be allowed to a bridge located parallel within the C/A carrying the freeway over streams, other roadways or railroads. (No parallel utility installations within the C/A)
- (B) Unless noted otherwise elsewhere in this RFP, no attachments shall be allowed to cored-slab bridges.
- (C) Unless noted otherwise elsewhere in this RFP, no attachments shall be allowed to curved bridges.

Attachments to structures, if allowed, shall meet the following criteria:

- (A) No attachments shall be allowed below the bottom of the beams and / or girders.
- (B) Drilling of, or attachments to, beams and / or girders shall not be allowed. Attachments shall only be allowed to the bottom of the bridge deck.
- (C) For water and sewer force mains, only restrained joint ductile iron pipe shall be allowed.

### **FIBER OPTIC CABLE / DROP CABLE**

Furnish and install a 72 single mode fiber-optic communications cable, drop cable assemblies, and all necessary hardware in accordance with the Section 1098-10 Standard Specifications.

Comply with the testing requirements in accordance with the Section 1731 Standard Specifications.

### **ELECTRICAL SERVICE**

Install new electrical service with 200Amps, 240/120 VAC service drops for each ITS device. Furnish and install related items of work, including, but not limited to standard size junction boxes, risers, guy assemblies, and wood poles with all necessary hardware in accordance with Section 1700 of the Standard Specifications. (Reference the Utilities Coordination Scope of Work found elsewhere in this RFP for additional coordination / approval requirements and payment responsibilities.)

### **FIBER-OPTIC SPLICE CENTERS**

Furnish and install fiber-optic splice enclosures and all necessary hardware where required to join fiber optic cables. Comply with the Section 1731 Standard Specifications.

Modify existing splice enclosures impacted by the project if necessary. Obtain approval from the Engineer prior to entering any existing splice enclosures.

Within enclosures, provide the necessary number of hinged mountable splice trays to store the number of splices required, plus the capacity to house twelve (12) additional splices. Provide a fiber containment basket for storage of loose buffer tubes that are expressed through the enclosure. Ensure enclosures allow sufficient space to prevent damage of the buffer tubes when coiled.

### **LOCAL AREA NETWORK**

Furnish and install new local area network (LAN) equipment. Furnish equipment that complies with IEEE standard 802. Furnish Ethernet Switches that comply with UL60950 or CSA C22.2 No. 60950 and FCC Part15 Class A for EMI emissions. Furnish all necessary equipment for a complete LAN, including but not limited to field-hardened video encoders; central video decoders; central media converters; field Ethernet switches; and core Ethernet switches.

### **OTHER CODES AND STANDARDS**

All ITS materials shall conform to the latest version of the applicable standards of the National Electrical Code (NEC), National Electric Manufacturer's Association (NEMA), the Underwriters' Laboratories, Inc. (UL), the Electronic Industries Association (EIA), the International Municipal Signal Association (IMSA), and the National Electrical Safety Code (NESC). All materials and workmanship must conform to the requirements of the NESC, standards of the American Society for Testing and Materials (ASTM); American National Standards Institute (ANSI). Comply with all federal laws, state laws, and city codes in accordance with the Standard Specifications.