Transportation

PAT McCRORY
Governor

NICHOLAS J. TENNYSON
Secretary

December 3, 2015

Addendum No. 1

Contract No.:	C203702
TIP No.:	I-3802B / I-3610 / B-5365
Counties:	Cabarrus & Rowan
Project Description:	I-85 from north of Lane Street to north of the US 29 / US 601 Connector; I-85 / NC 152 and NC 152 / US 29 / US 601 Connector Interchanges; and Bridge Nos. 21 and 34
RE:	Addendum No. 1 to Final RFP

January 19, 2016 Letting

To Whom It May Concern:

Reference is made to the Final Request for Proposals dated November 6, 2015 recently furnished to you on the above project. We have since incorporated changes, and have attached a copy of Addendum No. 1 for your information. Please note that all revisions have been highlighted in gray and are as follows:

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

Page No. 5 of the *Submittal of Quantities, Fuel Base Index Price and Opt-Out Option Project Special Provision* has been revised. Please void Page No. 5 in your proposal and staple the revised Page No. 5 thereto.

Page No. 48 of the *Price Adjustment for Asphalt Binder Project Special Provision* has been revised. Please void Page No. 48 in your proposal and staple the revised Page No. 48 thereto.

Page Nos. 86, 87, and 88 of the *Dynamic Message Sign (DMS) Project Special Provision* have been revised. Please void Page Nos. 86, 87, and 88 in your proposal and staple the revised Page Nos. 86, 87, and 88 thereto and add Page No. 87A in your proposal.

Page Nos. 90, 96, 97, 101, 104, 105, 106 and 107 of the *High Definition CCTV Metal Pole and Field Equipment Project Special Provision* have been revised. Please void Page Nos. 90, 96, 97, 101, 104, 105, 106 and 107 in your proposal and staple the revised Page Nos. 90, 96, 97, 101, 104, 105, 106 and 107 thereto.

Page No. 153 has been revised to add the *Construction Moratorium Project Special Provision.* Please void Page No. 153 in your proposal and staple the revised Page No. 153 thereto.

Page Nos. 172, 174, 175 and 181 of the *Roadway Scope of Work* have been revised. Please void Page Nos. 172, 174, 175 and 181 in your proposal and staple the revised Page Nos. 172, 174, 175 and 181 thereto.

Page Nos. 185 and 188 of the *Pavement Management Scope of Work* have been revised. Please void Page Nos. 185 and 188 in your proposal and staple the revised Page Nos. 185 and 188 thereto.

Page Nos. 216, 217, 218, 219, 220 and 221 of the *Environmental Permits Scope of Work* have been revised. Please void Page Nos. 216, 217, 218, 219, 220 and 221 in your proposal and staple the revised Page Nos. 216, 217, 218, 219, 220 and 221 thereto.

Page Nos. 273, 274, 275, 276, 278 and 281 of the *ITS Scope of Work* have been revised. Please void Page Nos. 273, 274, 275, 276, 278 and 281 in your proposal and staple the revised Page Nos. 273, 274, 275, 276, 278 and 281 thereto.

Page No. 299 of the *Erosion and Sedimentation Control Scope of Work* has been revised. Please void Page No. 299 in your proposal and staple the revised Page No. 299 thereto.

Page No. 312 has been revised to add the *Name Change for NCDENR Standard Special Provision*. Please void Page No. 312 in your proposal and staple the revised Page No. 312 thereto.

Page No. 318 of the *Asphalt Pavements – Superpave Standard Special Provision* has been revised. Please void Page No. 318 in your proposal and staple the revised Page No. 318 thereto and add Page No. 318A in your proposal.

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

Sincerely,

R.A. Garris, PE
Contract Officer

RAG/dth

cc: Mr. Rodger Rochelle, PE
Mr. Pat Ivey, PE
Ms. Teresa Bruton, PE
Mr. Ron McCollum, PE
Mr. David Hering, PE
File

TABLE OF CONTENTS

COVER SHEET

PROPOSAL SHEETS

PROJECT SPECIAL PROVISIONS *PAGE NO.*

(B) **Base Index Price**

The Design-Build Team's Estimate of Quantities will be used on the various partial payment estimates to determine fuel price adjustments. The Design-Build Team shall submit a payment request for quantities of work completed based on the work completed for that estimate period. The quantities requested for partial payment shall be reflective of the work actually accomplished for the specified period. The Design-Build Team shall certify that the quantities are reasonable for the specified period. The base index price for DIESEL #2 FUEL is **$ 1.4384** per gallon.

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

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

(D) **Change Option**

The proposer will not be permitted to change the option after the Price Proposal and the copy of the *Fuel Usage Factor Chart and Estimate of Quantities* sheet are submitted.

(E) **Failure to Submit**

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

INDIVIDUAL MEETINGS WITH PROPOSERS

(9-1-11) DB1 G048

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

The Department will attempt to arrange for a meeting between each individual proposer and the affected utility owners.

The Department will afford each proposer one additional meeting with the Department (maximum two-hour time limit) to discuss project specifics and address the proposer's concerns and questions. The meeting may occur at any time after the first Question and Answer Session with the proposers and before two weeks prior to the Technical and Price Proposals submittal date. The proposer shall request this meeting in writing to the State Contract Officer, providing the Department a minimum of one week advance notice of the requested date. The proposer shall also state in the request those disciplines within the Department that are requested to be in

Submittals for Review During Construction

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

PRICE ADJUSTMENTS FOR ASPHALT BINDER

(9-1-11) DB6 R25

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

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

The base price index for asphalt binder for plant mix is $410.00 per ton.

This base price index represents an average of F.O.B. selling prices of asphalt binder at supplier's terminals on December 1, 2015.

PRICE ADJUSTMENTS - ASPHALT CONCRETE PLANT MIX

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

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

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

Add the following paragraph before the first paragraph:

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

FIELD OFFICE

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

Description

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

V. DMS Structure

A. Description

This section includes all design, fabrication, furnishing, and erection of the DMS structures, maintenance platforms, walkways, and ladders for access to the DMS inspection doors, and attachment of the DMS enclosures to the structures in accordance with the requirements of these Project Special Provisions and the plans developed by the Design-Build Team. Fabricate the supporting DMS structures from tubular steel. As required in the ITS Scope of Work found elsewhere Furnish a pedestal and overhead type structure as required in the ITS Scope of Work found elsewhere in this RFP, and as approved by the Engineer. Cantilevered and Monotube (horizontal truss) DMS structures will not be allowed.

Provide pedestal DMS structures with a minimum 20-foot clearance from the high point of the road to the bottom of the DMS enclosure for front access DMS. Maintenance platforms, walkways and ladders will not be required for front access DMS.

Provide full span, overhead DMS structures with a minimum 20-foot clearance from the high point of the road to the bottom of the DMS enclosure for full size, walk-in DMS. Maintenance platforms, walkways, and ladders shall be required for full size, walk-in DMS.

Design the DMS assemblies (including footings), DMS mounting assemblies, maintenance platforms, walkways, and access ladders and submit shop drawings to the Engineer for approval. A Professional Engineer that is registered in the state of North Carolina shall prepare such computations and drawings. These must bear his signature, seal, and date of acceptance.

The provisions of Section 900 of the NCDOT 2012 *Standard Specifications for Roads and Structures* apply to all work covered by this section.

The Design-Build Team shall furnish DMS S-dimension drawings for each proposed DMS to the Engineer for approval.

Comply with the requirements of the *Foundations and Anchor Rod Assemblies for Metal Poles* and *Overhead and Dynamic Message Sign Foundations* Project Special Provisions found elsewhere in this RFP.

B. Material

Use materials that meet the following requirements of the NCDOT 2012 *Standard Specifications for Roads and Structures*:

Structural Steel	Section 1072
Overhead Structures	Section 1096
Signing Materials	Section 1092
Organic-Zinc Repair Paint	Article 1080-9
Reinforcing Steel	Sub-article 1070
Direct Tension Indicators	Sections 440 and 1072

C. Construction Methods

1. General

Fabricate the new DMS assemblies, maintenance platforms, walkways, access ladders, and attachment hardware in accordance with the details shown in the approved shop drawings prepared by the Design-Build Team and the requirements of these Project Special Provisions.

No welding, cutting, or drilling in any manner will be permitted in the field, unless approved by the Engineer.

Drill bolt holes and slots to finished size. Holes may also be punched to finished size, provided the diameter of the punched holes is at least twice the thickness of the metal being punched. Flame cutting of bolt holes and slots will not be permitted.

Erect the DMS in accordance with the requirements indicated on the plans developed by the Design-Build Team and in these Project Special Provisions. Field drill two holes per connection in the Z-bars for attaching the DMS to the structure. Use two bolts at each connection. Provide two (2) U-bolts at each U-bolt connection such as 1) each truss chord to sign hanger, or 2) each truss chord to platform support. Provide two (2) U-bolts at each U-bolt connection where ends of truss chords are supported. Minimum diameter of all U-bolts shall be ½ inch.

Use two coats of a zinc-rich paint to touch up minor scars on all galvanized materials (Refer to Section 1076-6 of the 2012 *Standard Specifications for Roads and Structures*).

For high strength bolted connections, provide direct tension indicator washers.

2. Shop Drawing

Submit to the Engineer for approval a complete design for the DMS assemblies (including footings), maintenance platforms, walkways, access ladders, DMS assembly hardware, and brackets for supporting the DMS and maintenance platforms. Base the design on the line drawings and correct wind speed in accordance with the 2009 AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*, 5th Edition, and the 2010 and 2011 Interim Revisions.

The manufacturer of the DMS assembly must ensure that design of the assembly is compatible with the DMSs for mounting and attachment.

Submit six copies of completely detailed shop drawings and one copy of the design computations for the DMS assembly to the Engineer for approval prior to fabrication. Show in the shop drawings complete design and fabrication details including foundations, provisions for attaching the DMS, maintenance platforms, walkways, and access ladders to supporting structures, applicable material specifications, and any other information necessary for procuring and replacing any part of the complete DMS assembly.

Allow a minimum of 15 working days for shop drawing approval after the Engineer receives them. If revised drawings are necessary, allow an additional 15 working days for review and approval of final shop drawings.

Approval of shop drawings by the Engineer shall not relieve the Design-Build Team of their responsibility for the correctness of drawings, or for the fit of all shop and field connections and anchors.

3. Design and Fabrication

For additional design and fabrication requirements, reference the *Overhead Sign Supports* Project Special Provision found elsewhere in this RFP.

A. Dynamic Message Sign Assemblies

Design shall be in accordance with the 2009 AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*, 5th Edition, and the 2010 and 2011 Interim Revisions.

The Wind Pressure Map developed from the 3-second gust speeds, as provided in Article 3.8 shall be used.

The wind drag coefficient for the dynamic message sign enclosure shall be 1.7.

Fabricate the supporting structures using tubular members of steel.

Horizontal components of the supporting structures for overhead DMS shall be of a truss design to support the DMS. Truss centerline shall coincide with the centerline of the DMS design area shown on the structure line drawing developed by the Design-Build Team. Provide permanent camber in addition to dead load camber in accordance with the 2009 AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*, 5th Edition, and the 2010 and 2011 Interim Revisions. Indicate on the shop drawings the amount of camber provided and the method employed in the fabrication of the support to obtain the camber.

For all U-bolt connections of hanger beams to overhead assembly truss chords, provide U-bolts with a flat washer, a lock washer and double nuts at each end of the U-bolts. All double nuts that are on any U-bolt shall be the same thickness and weight. When assembled, the double nuts shall be brought tight against each other by the use of two wrenches.

Fabricate the attachment assembly for mounting DMS in a manner that will ensure easy removal of the DMS.

B. DMS Maintenance Platform (Walkway)

Provide a maintenance platform, a minimum of three feet wide with open skid-resistant surface and safety railing on the DMS assemblies for access to the DMS inspection door. Provide platforms with fixed safety railings along both sides from the beginning of the platform to the inspection door.

Ensure the design, fabrication and installation of the access platforms on new DMS structures complies with the following:

1. The top of the platform grading surface is vertically aligned with the bottom of the DMS door. Ensure the platform extends from the DMS enclosure to the access ladder.
2. The DMS door will open 90-degrees from its closed position without any obstruction from the platform or safety handrails.
3. The platform is rigidly and directly connected to the walkway brackets and there is no uneven surface between sections.

4. Install a 4" x 4" safety angle parallel to and along both sides of the platform and extend it the entire length of the platform. Design the safety angle to withstand loading equivalent to the platform.

5. Ensure the platform design allows full access to the DMS enclosure inspection door with no interference or obstructions.

C. DMS Access Ladder

Provide a fixed ladder, of the same material as the DMS structures, leading to and ending at the access platform. Equip the ladder with a security cover (ladder guard) and lock to prohibit access by unauthorized persons. Furnish locks to operate with a Corbin #2 key and furnish two keys per lock. Design the rungs on 12-inch center to center typical spacing. The first ladder rung shall be no more than 18 inches above the landing pad. Attach the security cover approximately 6 feet above the concrete landing. Design the ladder and security cover as a permanent part of the DMS assembly and include complete design details in the DMS assembly shop drawings. Fabricate the ladder and cover to meet all OSHA requirements and applicable state and local codes, including but not limited to providing a ladder cage.

Furnish and install a level concrete pad a minimum of 4 inches deep, 24 inches wide, and 36 inches long to serve as a landing pad for accessing the ladder. Design the landing pad to be directly below the bottom rung. Access to the ladder shall not be obstructed by the DMS foundation. Provide pre-formed or cast-in place concrete pads.

HIGH DEFINITION CCTV METAL POLE AND FIELD EQUIPMENT

(06-17-15)

1. HIGH DEFINITION CCTV FIELD EQUIPMENT DESCRIPTION

The Design-Build Team shall provide and install High Definition (1080p) CCTV field equipment described in these Project Special Provisions. Ensure equipment is fully compatible with all features of the existing *VideoPro* video management software currently in use by NCDOT in this Region.

Obtain approval of the camera locations and orientation from the Engineer prior to installing the CCTV camera assemblies.

1.2 MATERIAL

General

The Design-Build Team shall provide and install new CCTV camera assemblies at the locations approved by the Engineer that consist of the following:

1. Dome CCTV camera that contains in a single enclosed unit the following:

   a. CCTV color digital signal processing camera unit with zoom lens, filter, control circuit, and accessories

- Video output connection: 1-volt peak to peak, 75 ohms terminated, BNC connector, and
- Primary voltage: 120 VAC,
- Camera voltage: 24 VAC or 24 VDC, and
- Camera power: 73 VA with heater at 24 VAC or 3A at 24 VDC.

Zoom Lens

The Design-Build Team shall provide each camera with a motorized zoom lens with automatic iris control with manual override and neutral density spot filter. The Design-Build Team shall provide lenses that meet the following optical specifications:

- Automatic focus: Automatic with manual override,
- Horizontal angle of view: 55.4 degrees at 3.6 mm wide zoom and 2.9 degrees at 82 mm telephoto zoom,
- Focal length: 3.6 mm to 124 mm, 30X optical zoom, 12X electronic zoom,
- Zoom Speed: 2.9, 4.2 and 5.8 seconds,
- Lens aperture: Minimum of f/1.6,
- Maximum Sensitivity at 30 IRE: .07 lux at ½ second color, .2 lux at 1/60 second black and white, .015 lux at ½ sec. black and white,
- Preset positioning: Minimum of 128 presets.

The lens shall be capable of both automatic and remote manual control iris and focus override operation. The lens shall be equipped for remote control of zoom and focus, including automatic movement to any of the preset zoom and focus positions. The Design-Build Team shall provide mechanical or electrical means to protect the motors from overrunning in extreme positions. The operating voltages of the lens shall be compatible with the outputs of the camera control.

Camera Housing

The Design-Build Team shall provide new dome style enclosures for the CCTV assemblies. Equip housing with mounting assemblies for attachment to the pole mount. The enclosures shall be equipped with a sunshield and be fabricated from corrosion resistant aluminum and finished in a neutral color of weather resistant enamel. The enclosure shall meet or exceed NEMA 4X ratings. The viewing area of the enclosure shall be tempered glass.

Surge Protection and Filtering

Surge energy rating	480 Joules

Environmental

Operating Environment	32 - 104° F
Operating Relative Humidity	0 - 95%
Storage Temperature	5 - 113° F
Storage Relative Humidity	0 - 95%

Conformance

Regulatory Approvals	FCC Part 15 Class A, UL 1778

2.3 Construction Methods

For each equipment cabinet installation, use stainless steel banding or other method approved by the Engineer to fasten cabinet to pole. Install equipment cabinets so that the height to the middle of the enclosure is 4 feet from ground level. No risers shall enter the top or sides of the equipment cabinet.

Install all conduits, condulets, and attachments to equipment cabinets in a manner that preserves the minimum bending radius of cables and creates water proof connections and seals.

Install a UPS in each cabinet and power all CCTV cameras from the UPS.

Install a level concrete technician pad measuring a minimum 4 inches thick, 24 inches wide and 36 inches long at the front door of the CCTV equipment cabinet.

3.0 CCTV METAL POLES

3.1 Description

A. CCTV Metal Poles

The Design-Build Team shall provide and install CCTV metal poles, grounding systems, and all necessary hardware. The work covered by this special provision includes requirements for the design, fabrication, and installation of custom designed CCTV metal poles and associated foundations.

The Design-Build Team shall provide designs of completed assemblies with hardware that equals or exceeds 2009 AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*, 5th Edition, and the 2010 and 2011 Interim Revisions. The Design-Build Team shall provide assemblies with a round or near-

round (18 sides or more) cross-section, or a multi sided cross section with no less than six sides. The sides may be straight, convex, or concave.

B. ** NOTE ** deleted CCTV camera lowering system requirement

C. ** NOTE ** deleted portable CCTV camera lowering system requirement

D. Drilled Pier Foundations

Design, furnish and install foundations for CCTV metal poles with all necessary hardware in accordance with the plans and specifications.

Design all CCTV pole foundations using actual soil conditions at each pole location. Perform soil test in accordance with sub-section (1) Soil Test of this special provision.

Any additional costs associated with a non-standard site-specific foundation including additional materials, labor and equipment will be considered incidental to the lump sum bid for the entire project. All costs for the non-standard foundation design will also be considered incidental to lump sum bid for the entire project.

Analysis procedures and formulas shall be based on AASHTO, ACI code and per FHWA manuals. Design methods based on engineering publications or research papers needs to have prior approval from NCDOT. The Department reserves the right to accept or disapprove any method used for the analysis.

Use a Factor of Safety of 1.33 for torsion and 2.0 for bending for the foundation design.

Foundation design for lateral load shall not exceed 1" lateral deflection at top of foundation.

Design all custom foundations to carry the maximum capacity of each metal pole.

When poor soil conditions are encountered which could create an excessively large foundation design, consideration may be given to allowing an exemption to the maximum capacity design. The Design-Build Team shall gain approval from the engineer before reducing a foundation's capacity. On projects where poor soil is known to be present, it is advisable that the Design-Build Team consider getting foundations approved before releasing poles for fabrication

Soil Test

(a) General

Drilled piers are reinforced concrete sections, cast in place against in situ, undisturbed material. Drilled piers are of straight shaft type and vertical.

Some standard drilled piers for supporting poles with mast arms may require wing walls to resist torsional rotation. Based upon this provision and the results of the required soil test, a drilled pier length and wing wall requirement may be

Refer to Metal Pole Standard Drawing Sheets M2 through M5 for fabrication details. Fabricate anchor bases from plate steel meeting, as a minimum, the requirements of ASTM A 36M or cast steel meeting the requirements of ASTM A 27M Grade 485-250, AASHTO M270 Gr 36 or an approved equivalent. Conform to the applicable bolt pattern and orientation as shown on Metal Pole Standard Drawing Sheet M2.

Ensure all hardware is galvanized steel or stainless steel. The Design-Build Team shall be responsible for ensuring that the designer / fabricator specifies connecting hardware and / or materials that do not create a dissimilar metal corrosive reaction.

Unless otherwise required by the design, ensure each anchor rod is 2" diameter and 60" length. The Design-Build Team shall provide 10" minimum thread projection at the top of the rod, and 8" minimum at the bottom of the rod. Use anchor rod assembly and drilled pier foundation materials that meet the *Foundations and Anchor Rod Assemblies for Metal Poles* Project Special Provision found elsewhere in this RFP.

For each structural bolt and other steel hardware, hot dip galvanizing shall conform to the requirements of AASHTO M 232 (ASTM A 153). Ensure end caps for poles are constructed of cast aluminum conforming to Aluminum Alloy 356.0F.

The Design-Build Team shall provide a circular anchor bolt lock plate that will be secured to the anchor bolts at the embedded end with 2 washers and 2 nuts. The Design-Build Team shall provide a base plate template that matches the bolt circle diameter of the anchor bolt lock plate. Construct plates and templates from ¼" minimum thick steel with a minimum width of 4". Galvanizing is not required.

The Design-Build Team shall provide 4 heavy hex nuts and 4 flat washers for each anchor bolt. For nuts, use AASHTO M291 grade 2H, DH, or DH3 or equivalent material. For flat washers, use AASHTO M293 or equivalent material.

The Design-Build Team shall provide a 2-inch hole equipped with an associated coupling and weatherhead approximately 5 feet below the top of the pole to accommodate passage of CCTV cables from inside the pole to the CCTV camera.

The Design-Build Team shall provide a 2-inch hole equipped with an associated coupling and conduit fittings/bodies approximately 18 inches above the base of the pole accommodate passage of CCTV cables from the CCTV cabinet to the inside of the pole. Refer to Metal Pole Standard Drawing Sheet M3 for fabrication details.

The Design-Build Team shall provide a hand hole access with a watertight cover and have poles permanently stamped above the base hand hole with the identification tag details as shown on Metal Pole Standard Drawing Sheet M2.

For each pole, The Design-Build Team shall provide a 1/2 inch minimum thread diameter, coarse thread stud and nut for grounding which will accommodate #4 AWG ground wire. Ensure that the lug is electrically bonded to the pole and is conveniently located inside the pole at the hand hole.

** Note ** Deleted CCTV camera lowering system requirement. The remaining portion of this page is intentionally being left blank.

** Note ** Deleted portable CCTV camera lowering device requirement. The remaining portion of this page is intentionally being left blank.

3.3 CONSTRUCTION METHODS

CCTV Metal Poles

Install anchor rod assemblies in accordance with the *Foundations and Anchor Rod Assemblies for Metal Poles* Project Special Provision found elsewhere in this RFP.

Erect CCTV metal poles only after concrete has attained a minimum allowable compressive strength of 3,000 psi. For further construction methods, see construction methods for Metal Strain Pole.

Connect poles to grounding electrodes and bond them to the electrical service grounding electrodes.

For holes in the poles used to accommodate cables, install grommets before wiring pole or arm. Do not cut or split grommets.

Attach the hand hole covers to the pole by a sturdy chain or cable. Ensure the chain or cable is long enough to permit the cover to hang clear of the opening when the cover is removed, and is strong enough to prevent vandalism. Ensure the chain or cable will not interfere with service to the cables in the pole.

Attach cap to pole with a sturdy chain or cable. Ensure the chain or cable is long enough to permit the cap to hang clear of the opening when the cap is removed.

Perform repair of damaged galvanizing that complies with the 2012 *Standard Specifications for Roads and Structures*, Article 1076-6 “Repair of Galvanizing.”

Install galvanized wire mesh around the perimeter of the base plate to cover the gap between the base plate and top of foundation for debris and pest control.

Install a ¼ inch thick plate for concrete foundation tag to include: concrete grade, depth, diameter, and reinforcement sizes of the installed foundation.

Install CCTV metal poles, hardware, and fittings as shown on the manufacturer’s installation drawings. Install poles so that when the pole is fully loaded it is within 2 degrees of vertical.

** Note ** Deleted CCTV camera lowering system requirement.

Drilled Pier Foundations

Construct drilled pier foundations in accordance with the *Foundations and Anchor Rod Assemblies for Metal Poles* Project Special Provision found elsewhere in this RFP.

GEOTEXTILE FOR PAVEMENT STABILIZATION

(5-7-14) DB 08-05

Description

Furnish and place geotextile for pavement stabilization in accordance with the Geotechnical Engineering Scope of Work found elsewhere in this RFP. Geotextile for pavement stabilization may be required to prevent pavement cracking and provide separation between the subgrade and pavement section at locations shown in the plans developed by the Design-Build Team and as directed by the Engineer.

Materials

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

Item	Section
Geotextiles	1056

Provide Type 5 geotextile for geotextile for pavement stabilization that meets the following requirements:

GEOTEXTILE FOR PAVEMENT STABILIZATION REQUIREMENTS		
Property	**Requirement (MARV[A])**	**Test Method**
Tensile Strength @ 5% Strain (MD & CD[A])	1,900 lb/ft	ASTM D4595
Ultimate Tensile Strength (MD & CD[A])	4,800 lb/ft	ASTM D4595
Melting Point	300° F	ASTM D276

A. Define "minimum average roll value" (MARV), "machine direction" (MD) and "cross-machine direction" (CD) in accordance with ASTM D4439.

Sampling

For the top half of all embankments, the Design-Build Team shall take soil samples of the embankment material as it is constructed. The Design-Build Team shall sample the embankment in three-foot thick zones at a minimum frequency of one sample per 1,000 feet, per each lane, for classification tests. For the aforementioned tests, a lane shall be considered 28 feet wide in one direction for sampling purposes. Additional samples shall be taken to ensure that all the predominant soil types, limits of distribution of these soils and different site conditions have

Mixed Material: After mixing, ensure that the application temperatures for the combined materials at the gun tip are within the temperature range recommended by the manufacturer for the particular product used.

Produce marking, which upon cooling, has the ability to resist deformation caused by traffic throughout its entire length.

(D) Observation Period

Epoxy pavement markings shall be subject to a 30-day observation period.

Maintain responsibility for the pavement markings for a 30-day observation period beginning upon the satisfactory completion of all work required in the plans developed by the Design-Build Team. Guarantee the markings under the payment and performance bond in accordance with Article 105-17 of the 2012 *Standard Specifications for Roads and Structures*.

Have traffic operating on the facility during the entire 30-day observation period unless otherwise directed.

Provide pavement marking material, which during the 30-day observation period, shows no signs of failure due to blistering, excessive cracking, chipping, bleeding, staining, discoloration, oil content of the pavement materials, smearing or spreading under heat, deterioration due to contact with grease deposits, oil, diesel fuel, or gasoline drippings, spilling, poor adhesion to the pavement materials, vehicular damage, debonding and normal wear.

Replace, at no additional expense to the Department, any pavement markings that do not perform satisfactorily under traffic during the 30-day observation period.

CONSTRUCTION MORATORIUM

(11-30-15) DB1 G18C

No tree cutting will be allowed from May 15 through August 15 of any year.

ROADWAY SCOPE OF WORK (12-1-15)

It should be noted that TIP Project, I-3802B, as referenced throughout this Request for Proposals (RFP), represents TIP Projects I-3802B, I-3610 and B-5365. All references to TIP Projects I-3802, I-3802B, I-3610 and B-5365 in material provided by the Department shall apply to this project.

Project Details

- The Design-Build Team shall design and construct an eight-lane divided freeway with a minimum 22-foot median from north of Lane Street (SR 2180) to north of the US 29 / US 601 Connector. Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct the -L- Line providing the same or better access, widening, improvements and level of service included in the I-3802 Public Meeting Map provided by the Department. The limits of -L- Line construction shall be of sufficient length to tie to existing based upon the current NCDOT guidelines and standards. The mainline (-L- Line) shall be designed and constructed to meet a 70-mph design speed for a rolling urban freeway designed to interstate standards. The Design-Build Team shall provide all other design criteria in the Technical Proposal.

- Along the -L- Line, the Design-Build Team shall design and construct minimum 14-foot outside shoulders (twelve-foot useable shoulder width plus two feet), 12-foot of which shall be full depth paved shoulders, including all acceleration, deceleration and auxiliary lanes, and ramps / loops to the back of the gore (12-foot width). Along the -L- Line, the Design-Build Team shall design and construct a minimum 22-foot full depth paved median with Type "T" double-faced concrete median barrier, unless allowed otherwise elsewhere in this RFP.

- The Design-Build Team shall coordinate with Project I-3802A design and construction to ensure accurate hydrology, capacity, and horizontal and vertical ties that adhere to the design criteria. The Design-Build Team shall not make any design or construction revisions that impact the design or construction of project I-3802A without prior written approval from the Design-Build Unit (Reference the *Cooperation Between Contractors* Project Special Provision found elsewhere in this RFP)

- Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct -Y- Lines, ramps, and service roads providing the same or better access, widening, improvements and level of service included in the I-3802 Public Meeting Map provided by the Department. The limits of -Y- Line construction shall be of sufficient length to tie to existing based upon the current NCDOT guidelines and standards.

- 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.

construct Yost Town Road such that it is provided access to the Hope Lane (SR 2672) extension noted above.

- The Design-Build Team shall coordinate with the China Grove Properties property owner to ensure that the aforementioned roadway revisions provide accurate hydrology, capacity, and horizontal and vertical ties to the future site development design.
- The Design-Build Team shall design and construct all intersection improvements required to accommodate the new traffic distribution associated with replacing the NC 152 / US 29 / US 601 Connector interchange with a roundabout and eliminating the US 29 / US 601 Connector. Specifically, in accordance with the January 1, 2012 NCDOT Congestion Management Capacity Analysis Guidelines, the Design-Build Team shall provide a capacity analysis for the NC 152 / US 29 corridor and surrounding roadways that, at a minimum, indicates that all intersections, as well as their individual intersection movements, will operate at a Level of Service D or better.
- Within the horizontal curve located north of the US 29 / US 601 Connector flyover bridge, the Design-Build Team shall design and construct the mainline median transition from a minimum 22-foot width, with a Type "T" double-faced concrete median barrier, to the existing 46-foot width, with one line of rigid double-faced guardrail. From the northern limits of the aforementioned transition to the project's northern terminus, the existing mainline median shoulders may remain in place, unless their replacement is required elsewhere in this RFP. If replacement is required, the Design-Build Team shall design and construct minimum 12-foot mainline median shoulders, ten-foot of which shall be full depth paved shoulders.
- The Design-Build Team shall be responsible for all activities required for this revision, as deemed necessary by the NCDOT and the FHWA, including but not limited to public involvement, additional design effort, additional construction effort, NEPA re-evaluation, IAR revision, and / or the coordination with and concurrence from other stakeholders, including but not limited to the City of China Grove. The Department will not honor any requests for additional contract time or compensation for any efforts associated with replacing the NC 152 / US 29 / US 601 Connector interchange with a roundabout and eliminating the US 29 / US 601 Connector, including but not limited to public involvement, additional design effort, additional construction effort, and / or additional coordination and approvals.

- The Design-Build Team shall design and construct one-lane ramps that provide a minimum 16-foot lane width. The Design-Build Team shall design and construct two lane ramps that provide minimum 12-foot lanes. All ramps shall have 14-foot outside shoulders, four-foot of which shall be full depth paved shoulders and 12-foot inside shoulders, four-foot of which shall be full depth paved shoulders.
- The Design-Build Team shall design and construct loops that adhere to Table 3-29, *Design Widths of Pavements for Turning Roadways*, shown in AASHTO's *A Policy on Geometric Design of Highways and Streets* (2011) - Case II / Condition C for one-lane loops; Case III / Condition C for two-lane loops. All loops shall have 12-foot outside shoulders, four-foot of which shall be full depth paved shoulders. All loops shall have 2'-6" curb and gutter along the inside edge of pavement, with a 14-foot berm. The minimum loop design shall be 30-mph with a minimum 230-foot radius.
- The Design-Build Team will not be required to design or construct ramps or bridges to accommodate future loops.

- Excluding transitions required to tie to existing and steeper cross slopes (0.025 maximum) required to eliminate hydroplaning, the I-85 normal crown cross slope shall be 0.02. The I-85 crown point shall be located such that the two inside lanes in each direction of travel slope towards the median and the remaining lanes slope towards the outside.
- The Design-Build Team shall design and construct I-85 to accommodate a future managed travel lane in each direction. The future managed travel lane shall consist of a 12-foot lane and a four-foot buffer. The 12-foot managed travel lane shall be located adjacent to the ten-foot median paved shoulder and the four-foot buffer shall be located between the 12-foot managed travel lane and the adjacent general purpose lane. To maintain the number of general purpose lanes, an additional 16-foot width in each direction will be constructed along the I-85 outside edge of pavement in the future. The Design-Build Team shall note in the Technical Proposal the location of the I-85 longitudinal joint for the proposed and ultimate lane configurations.
- Excluding the US 29 / NC 152 / East Church Street / Lentz Road intersection and the US 29 / NC 152 / East Liberty Street intersection, the Design-Build Team shall design and construct at-grade intersections with the lane configurations noted in the August 4, 2015 *I-3802B - Design-Build Clarification Including East Church Street* Memorandum provided by the Department, unless allowed otherwise elsewhere in this RFP. 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 August 4, 2015 *I-3802B - Design-Build Clarification Including East Church Street* 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 Memorandum; the minimum deceleration length, as defined in the NCDOT Roadway Design Manual (Reference Section 9-1, Figure F-4A); and the approach / departure taper.
  - Right turn lanes / tapers shall be provided in accordance with the NCDOT Right Turn Lane Warrants, as defined in the Roadway Design Manual (Reference Section 9-1, Figure F-4C).
- The Design-Build Team shall design and construct a northern stubout on the roundabout at the NC 152 / Power Street intersection. The Design-Build Team shall design and construct all channelization islands required for the roundabout approach / departure and taper the stubout to a two-lane typical section. The Design-Build Team shall coordinate with the China Grove Properties property owner to ensure that the stubout provides accurate hydrology, capacity, and horizontal and vertical ties to the future site development design.
- Excluding the 20-year traffic forecast requirement, for all intersection / interchange design modifications, the Design-Build Team shall provide a traffic analysis that adheres to the January 1, 2012 Congestion Management Capacity Analysis Guidelines for the Department's review and acceptance. The aforementioned traffic analyses shall be developed with the 2035 Build Conditions traffic volumes specified in Figure 4 of the May 2009 I-85 Widening and Interchange Revisions Study provided by the Department.

- Unless noted otherwise elsewhere in this RFP, all roundabouts 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 Build Conditions traffic volumes specified in Figure 4 of the May 2009 I-85 Widening and Interchange Revisions Study provided by the Department, and SIDRA Intersection 5.1 or SIDRA Intersection 6.0 analysis software, for NCDOT review and acceptance. All roundabouts shall be designed and constructed to accommodate a WB-67. The Department prefers that all roadway grades approaching a roundabout are 4.0% or less. Thus, justification, in the Department's sole discretion, shall be provided for all roadway approach grades that are steeper than 4.0%.

- Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall design and construct all lane drops from the outside travel way.

- A sag vertical curve low point will not be allowed on any proposed bridge or approach slab.

- Excluding grades required to tie to existing, the minimum longitudinal grade shall be 0.30%.

- The Department has followed the Merger Process used by the Environmental Agencies and the Department to obtain environmental permits. 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 additional compensation associated with any coordination or approval process resulting from design and / or construction modifications.

- Excluding parcels restricted by Control of Access, the Design-Build Team shall design and construct a minimum of one driveway per parcel. The Design-Build Team shall design and construct all driveways that adhere to the NCDOT *Policy on Street and Driveway Access to North Carolina Highways* and the minimum requirements noted below. Excluding the maximum grade requirement, if the NCDOT *Policy on Street and Driveway Access to North Carolina Highways* and the requirements noted below have conflicting design parameters, the proposed design shall adhere to the aforementioned Policy:

  - The Design-Build Team shall provide horizontal and vertical alignments for all driveways that require 100 feet or longer to tie to existing.

  - Excluding grades required 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.

**** NOTE **** Deleted section on alternate I-85 Shoulder Designs

I-85 PAVEMENT DESIGNS FROM THE EXISTING DOWELED JOINTED CONCRETE PAVEMENT NORTH OF THE US 29 / US 601 CONNECTOR (APPROXIMATELY STATION 750+00 -L-) TO THE NORTHERN PROJECT LIMITS

I-85 Travel Lane Design

For widening the existing doweled jointed concrete pavement north of the US 29 / US 601 Connector (approximately Station 750+00 -L-) to the northern project limits, the Design-Build Team shall not convert the following into a travel lane: 1) the existing mainline travel lanes that do not adhere to the geometric design criteria; 2) pavement within the I-85 / US 29 / US 601 ramp gores; or 3) the existing mainline shoulders. If the Design-Build Team proposes to locate a travel lane in any portion of the aforementioned areas, the Design-Build Team shall remove and dispose of / recycle the existing pavement, to the top of the soil subgrade. The Design-Build Team shall not damage the concrete pavement that remains or the underlying layers. The pavement design for the widened mainline travel lanes shall consist of the following:

14.0” doweled jointed concrete
4.0” PADC
1.0” SF9.5A
Subgrade Stabilization

The joints shall match the adjacent travel lane joint spacing and location.

I-85 Shoulder Design

From the existing doweled jointed concrete pavement north of the US 29 / US 601 Connector (approximately Station 750+00 -L-) to the northern project limits the pavement design for the mainline median and outside shoulders shall consist of the following:

11.0” jointed concrete, without dowels, on 8” of ABC

Shoulder joints shall match the adjacent travel lane joint spacing and location; and be anchored to the mainline travel lane pavement with tie bars.

** NOTE ** Relocated longitudinal joint requirements.

OTHER REQUIREMENTS

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

In accordance with the requirements noted below, the mainline subgrade stabilization shall consist of chemical stabilization or Class IV stabilization. The Design-Build Team shall specify the proposed mainline subgrade stabilization, or combination, with approximate limits of each type clearly noted in the Technical Proposal. However, only one subgrade stabilization alternate

as extra work in accordance with Subarticle 104-8(A) of the 2012 *Standard Specifications for Roads and Structures* at the unit price of $415.00 per square yard. All work tasks required to repair additional jointed concrete pavement slabs requested by the Engineer, including but not limited to traffic control and portable lighting, shall be incidental to the unit cost noted above.

In accordance with the *Patching Concrete Pavement Spalls* Project Special Provisions found elsewhere in this RFP, the Design-Build Team shall repair spalls in the existing concrete pavement at the spall repair locations noted in the August 20, 2015 I-3802B PCCP Pavement Repair document provided by the Department. All additional patching concrete pavement spalls requested by the Engineer will be paid for as extra work in accordance with Subarticle 104-8(A) of the 2012 *Standard Specifications for Roads and Structures* at the unit price of $300.00 per square foot. All work tasks required to patch concrete pavement spalls requested by the Engineer, including but not limited to traffic control and portable lighting, shall be incidental to the unit cost noted above.

On all ramps and loops, the adjacent through lane pavement design shall extend to the back of the gore (12-foot width).

Longitudinal joints of all surface course layers shall not be located in the final traffic pattern wheel path. If applicable, the Design-Build Team shall indicate in the Technical Proposal where all underlying longitudinal joints will be located and demonstrate how the underlying longitudinal joint location will minimize reflective cracking.

Unless noted otherwise elsewhere in this RFP, the minimum widened width shall be six feet. The minimum widened width may be reduced to four feet only if the Design-Build Team demonstrates that their equipment properly compacts narrow widening and obtains prior Department approval. Tapers that tie proposed pavement to existing pavement are excluded from the narrow widening requirements noted above.

Except as prohibited elsewhere in this RPF, in areas where the existing -Y- Line or ramp paved shoulders are proposed to be incorporated into a permanent travel lane, the Design-Build Team shall be responsible for evaluating the existing paved shoulder regarding its suitability for carrying the projected traffic volumes. In the event that the existing paved shoulder is found to be inadequate, the Design-Build Team shall be responsible for upgrading the existing paved shoulder to an acceptable level or replacing the existing paved shoulder. The Design-Build Team shall submit their evaluation and proposed use of existing paved shoulders to the Design-Build Unit for review and acceptance or rejection.

The Design-Build Team shall be responsible for the design of all temporary pavements, including but not limited to pavement for temporary breakdown areas, 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 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. Prior to placing traffic on existing shoulders, the Design-Build Team shall remove the existing rumble strips. Temporary pavements shall be designed in accordance with the most recent version of the North Carolina DOT *Pavement Design Procedure*. Temporary pavement designs and associated calculations

ENVIRONMENTAL PERMITS SCOPE OF WORK (11-30-15)

General

The Design-Build Team shall be responsible for preparing all documents necessary for the Department to obtain compliance with Section 7 of the *Endangered Species Act* for the northern long-eared bat, and obtain the environmental permits required for the project construction. Permit applications shall be required for the: US Army Corps of Engineers (USACE) Section 404 Permit and NC Department of Environmental Quality (DEQ) Division of Water Resources (DWR) Section 401 Water Quality Certification.

The Design-Build Team shall not begin ground-disturbing activities, including utility relocation in jurisdictional areas, until the environmental permits have been issued (this does not include investigative borings covered under a Nationwide Permit No. 6 and utility relocation work outside jurisdictional resources noted below). The Design-Build Team shall coordinate with the Design-Build Unit to determine if a Preconstruction Notification (PCN) is required for the Nationwide Permit No. 6. If a PCN is required, the Design-Build Team shall submit all necessary documents and forms to the Design-Build Unit for submittal to the appropriate agencies. If a PCN is not required, the Design-Build Team may proceed with geotechnical investigations outside jurisdictional resources, provided all of the Nationwide Permit No. 6 General Conditions are adhered to.

The Design-Build Team may begin utility relocation work prior to obtaining the aforementioned permits provided that (1) the Department is notified in writing prior to these activities; (2) such activities are outside jurisdictional resources, do not require tree clearing, and do not occur beneath a bridge; (3) a meeting is held with the NCDOT and permitting agencies prior to beginning work, if necessary; and (4) the Design-Build Team submits a Preconstruction Notification for the Department to forward to the permitting agencies, if necessary.

The Department will allow no direct contact between the Design-Build Team and representatives of the environmental agencies. No contact between the Design-Build Team and the environmental agencies shall be allowed either by phone, e-mail or in person, without representatives of the Department's Natural Environment Section (NES) - Environment Coordination and Permitting Group (ECAP), the Department's NES - Biological Surveys Group (BSG), or the Division's Environmental Officer present. A representative from the Design-Build Unit shall be included on all correspondence.

The Department has reached Concurrence Point 4A in the Merger Process used by the environmental agencies and the Department to obtain environmental permits for projects. The Design-Build Team shall participate and present information for Concurrence Points 4B and 4C that are necessary to complete the Merger Process. 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 "Merger Implementation Team – Merger Process Information" which will be provided by the Department upon request.

Unless otherwise stipulated in the Technical Proposal, the Department will schedule the 4B and 4C Meetings for I-3802B / I-3610 / B-5365 for June 2016 and September 2016, 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 otherwise noted 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 concurrence meetings and 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 compliance with Section 7 of the *Endangered Species Act* for the northern long-eared bat and / or 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.

Endangered Species Act Compliance for Northern Long-eared Bat

As noted in the December 2, 2015 Construction Consultation Project Commitments, the US Army Corps of Engineers (USACE) Section 404 Permit will not be issued until the *Endangered Species Act* compliance is satisfied for the northern long-eared bat. To assist with obtaining this compliance, the Department has completed the Federally Protected Bat Species Survey Report for the preliminary design shown on the I-3802 Public Meeting Map. If the Design-Build Team's design and / or construction extend beyond the limits surveyed by the Department, the Design-Build Team shall update the Federally Protected Bat Species Survey Report to include all additional areas impacted by the Design-Build Team's design and / or construction for the Department's review and acceptance. The Design-Build Team shall acquire all other information and prepare drawings required to obtain compliance with Section 7 of the *Endangered Species Act* for the northern long-eared bat. At a minimum, the required information / drawings shall consist of the following:

- Biological Conclusion Recommendations
- Estimated total acreage of tree clearing for the project
- Estimated tree clearing acreage beyond 100 feet of the existing cleared corridor
- Electronic design files showing the limits of cut, fill, and tree clearing

The tree clearing acreage noted above shall consist of all tree clearing required for the project, including but not limited to, roadway and bridge construction, staging areas, borrow pits, and utility relocation / construction.

The Design-Build Team shall submit one package of required information / drawings for the entire project. The Design-Build Team shall not submit multiple packages to develop a "staged approval" process. Upon review and acceptance, the Department will forward the information / drawings required for compliance with Section 7 of the *Endangered Species Act* to the appropriate environmental agencies. Environmental agency review time will be approximately 90 days from the Department's receipt of a complete and accurate package.

Major Permit Application Process

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:

- Cover Letter
- Minutes from the 4B and 4C Meetings
- Permit drawings (with and without contours)
- Wetland Permit Impact Summary Sheets
- Half-size plans
- Completed forms (Section 404 ENG 4345, etc.) appropriate for impacts
- Division of Mitigation Acceptance Letter

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

The Design-Build Team shall submit one permit application for the entire project. The Design-Build Team shall not submit multiple applications to develop a "staged permitting" process to expedite construction activities in a phased fashion.

Direct coordination between the Design-Build Team, the Design-Build Unit, Resident Engineer, Division Environmental Officer (DEO) and the Project Development and Environmental Analysis Unit - Natural Environment Section (PDEA - NES) shall be necessary to ensure proper permit application development. Upon completion of the permit application package, the Design-Build Team shall concurrently forward the package to the Design-Build Unit, Resident Engineer, Division Environmental Officer, Hydraulics Unit and PDEA - NES for review and approval.

After all revisions are complete, the Department will subsequently forward the package to the appropriate environmental agencies.

Any temporary construction measures, including de-watering, construction access, etc. shall be addressed in the permit application. Impacts that result from so-called temporary measures may not be judged to be temporary impacts by the environmental agencies. These issues shall be addressed and reviewed by PDEA - NES prior to the 4B and 4C Meetings and resolved with the environmental agencies during the aforementioned meetings.

The Design-Build Team shall clearly indicate the location of and impacts of haul roads and utility relocations in jurisdictional areas. The Design-Build Team shall also identify all proposed borrow and waste sites. Further, the Design-Build Team shall describe the construction methods for all structures. The temporary impact descriptions (haul roads, utility relocations, work bridges, etc.) shall include restoration plans, schedules and disposal plans. The aforementioned information, descriptions and details shall be presented during the 4B and 4C Meetings and be included in the permit application.

The NCDOT hereby commits to ensuring, to the greatest extent practicable, that the footprint of the impacts in areas under the jurisdiction of the Federal Clean Water Act will not be increased during the Design-Build effort. In accordance with the Department of Water Resources' NCG 010000, all fill material shall be stabilized and maintained to prevent sediment from entering adjacent waters or wetlands. The Design-Build Team shall be responsible for ensuring that the design and construction of the project will not impair the movement of aquatic life.

Requests made for modifications to the permits obtained by the Design-Build Team shall only be allowed if the Engineer determines it to be in the best interest of the Department and shall be strongly discouraged. The Design-Build Team shall not take an iterative approach to hydraulic design issues. The hydraulic design shall be complete prior to permit application.

Individual Permit Timeframe

The Design-Build Team should expect it to take up to 11 months to accurately and adequately complete all designs necessary for the permit application, submit the application to the Department, and obtain permit approvals from the environmental agencies. Environmental agency review time will be approximately 120 days from receipt of a "complete" package. No requests for additional contract time or compensation will be allowed if the permits are obtained within this 11-month period. With the exception of location and survey work, utility relocations outside jurisdictional resources that adheres to the aforementioned requirements, permitted investigative borings covered under a Nationwide Permit No. 6 and / or Preconstruction Notification secured by the Design-Build Team, no mobilization of men, materials, or equipment for site investigation or construction of the project shall occur prior to obtaining the permits (either within the 11-month period or beyond the 11-month period). The Department will not honor any requests for additional contract time or compensation, including idle equipment or mobilization or demobilization costs, for the Design-Build Team mobilizing men, materials (or ordering materials), or equipment prior to obtaining all permits. The Department will consider

requests for contract time extensions for obtaining the permits only if the Design-Build Team has pursued the work with due diligence, the delay is beyond the Team's control, and the 11-month period has been exceeded. If time were granted it would be only for that time exceeding the 11-month period. This 11-month period is considered to begin on the Date of Availability as noted elsewhere in the RFP.

The Design-Build Team needs to be aware that the timeframes listed above for the NCDWR, and the USACE to review a permit application begin only after a fully complete and 100% accurate submittal.

Mitigation Responsibilities of the Design-Build Team

As required by the NEPA Process and the USACE / EPA Section 404 (b)(1) Guidelines, to offset potential wetland and stream impacts, the Department has reviewed the roadway project corridor for potential on-site mitigation opportunities. Since no on-site mitigation opportunities were identified, the Department has acquired the compensatory mitigation for unavoidable impacts to wetlands and surface waters due to the project construction from the Division of Mitigation Services. This mitigation was based on impacts as identified in the Department's Preliminary Plans.

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

Should additional jurisdictional impacts result from revised design and / or construction methods, suitable compensatory mitigation for wetlands and / or streams shall be the sole responsibility of the Design-Build Team. Therefore, it is important to note that additional mitigation will have to be approved by the environmental agencies and such approval shall require, at a minimum, the preparation and approval of a Mitigation Plan before permits are approved and before construction may commence. To mitigate for these additional jurisdictional impacts, the Design-Build Team shall be responsible for all costs associated with acquiring suitable mitigation. Construction of any on-site mitigation shall be performed by a contractor that has successfully constructed similar on-site mitigation. In the absence of suitable on-site mitigation, the Design-Build Team shall be responsible for acquiring additional mitigation from the Division of Mitigation Services or an approved compensatory mitigation banking resource.

The Design-Build Team shall analyze all new areas to be impacted that have not been analyzed during the NEPA Process and any staging areas that are located outside the project right of way. This analysis shall include performing all environmental assessments. These assessments shall require the Design-Build Team to engage the services of a competent environmental consultant to conduct a full environmental investigation to include, but not be limited to, Federally Listed Threatened and Endangered Species, wetlands, streams, avoidance and minimization in jurisdictional areas, compensatory mitigation, FEMA compliance, and historical, archaeological, and cultural resources surveys in these areas. The environmental consultant shall obtain concurrence through PDEA - NES to document compliance with Section 7 of the *Endangered*

Species Act for those species requiring such concurrence. In addition, the Design-Build Team shall identify additional mitigation required, identify the amount of time beyond the aforementioned 11-month period, and fulfill all other requirements that the permitting agencies impose to obtain the permit. Any contract time extensions resulting from additional environmental assessments required by the Design-Build Team's design and / or construction methods impacting areas outside those previously analyzed through the NEPA Process shall be solely at the Department's discretion.

Commitments

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize wetland and stream impacts and to provide full compensatory mitigation of all remaining wetland and stream impacts. Avoidance measures were taken during the planning and NEPA Process and minimization measures were incorporated as part of the preliminary design provided by the Department. The Design-Build Team shall incorporate these avoidance and minimization features, plus any minimization identified during the 4B and 4C Meetings, into the design and / or construction methods.

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

Unless noted otherwise elsewhere in this RFP, the Design-Build Team shall strictly adhere to these commitments, as well as others, including but not limited to, those included in the Categorical Exclusion, Construction Consultation, all permits, interagency meetings, site visits, and the *Construction Moratorium* Project Special Provision found elsewhere in this RFP.

If the Design-Build Team discovers any previously undocumented historic or archaeological resources while conducting the authorized work, they shall immediately notify, in writing, the NCDOT Archaeology Supervisor and NCDOT Project Development Engineer, as listed below, who will initiate any required State / Federal coordination after a timely initial assessment. The Design-Build Team shall also immediately notify a representative from the Design-Build Unit. Inadvertent or accidental discovery of human remains shall be handled in accordance with North Carolina General Statutes 65 and 70. All questions regarding these discoveries shall be addressed to Mr. Matthew Wilkerson, NCDOT Archaeology Group Leader at (919) 707-6089, or Mr. Derrick Weaver, PE, NCDOT Project Development Group Supervisor (919) 707-6049.

ITS SCOPE OF WORK (12-1-15)

GENERAL

Design, furnish, and install the following ITS devices and communications cable system along the proposed project limits. Interconnect the new fiber optic communications cables with existing fiber optic communications cable located along southbound I-85, near Exit 68. Integrate one (1) new DMS, one (1) relocated existing DMS, and the new CCTV devices into the existing computer and network hardware and software at the NCDOT Triad Regional Traffic Management Center (TRTMC) Traffic Management System (TMS) located at 201 South Chimney Rock Road, Greensboro, NC 27409. Major items of work include, but are not limited to, the following:

- Conduit System (four – 1 ¼ inch conduits for communication and one – 2 inch conduit for electrical)
- 144 fiber single-mode fiber optic communications cable with tracer wire
- Fiber optic drop cable assemblies with tracer wire
- Junction boxes
- Metal Poles
- Splice enclosures
- Four (4) Digital CCTV cameras
- One (1) New 8’ x 15’ Front Access Dynamic Message Sign (DMS) on a pedestal mount structure
- Remove, stockpile, and re-install one (1) existing, full size walk-in DMS on a new DMS overhead structure that spans the I-85 northbound lanes
- Electrical service equipment
- Local Area Network equipment

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

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

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

Perform all work in accordance with the *Dynamic Message Sign* and *High Definition CCTV Metal Pole and Field Equipment* Project Special Provisions found elsewhere in this RFP, 2012 NCDOT *Standard Specifications for Roads and Structures* and the 2012 *NCDOT Roadway Standard Drawings.*

PROJECT OPERATION REQUIREMENTS

Intermediate Contract Time #8 for Failure to Repair a Damaged Underground Fiber Optic Communications Cable and Restore Communication

The Design-Build Team shall repair all existing underground fiber optic communication cables damaged during construction. The Design-Build Team shall immediately report damages to the Engineer and TRTMC at (336) 315-7080. The Design-Build Team shall repair all damages within 24 hours at no cost to the Department. The Design-Build Team shall bring all affected fiber optic communication cables back on line within the same 24 hours.

Liquidated Damages for Intermediate Contract Time #8 for failure to repair a damaged underground fiber optic communications cable and restore communication within 24 hours are $1,500.00 per 24-hour period or any portion thereof.

DESIGN REQUIREMENTS

Design the field-to-center communication network using Gigabit Fiber Optic Ethernet technology. For all equipment not specified herein, including but not limited to, encoders and Ethernet equipment, provide product specifications for the Department's review and approval prior to incorporation. Furnish, install, and / or upgrade all field and central equipment, including but not limited to, encoders and switches. Furnish managed Ethernet routing switches and edge switches that provide Ethernet connectivity at transmission rates of 1000 megabits per second from each ITS device to the TRTMC.

Reuse and maintain the current fiber optic network equipment and configuration.

Splice into the existing fiber optic communications cable located along southbound I-85, near Exit 68.

The Department will furnish and install the cellular communications equipment for the DMS proposed on US 29.

DIGITAL CCTV CAMERAS

Strategically locate and install four (4) digital CCTV cameras so the cameras cumulatively provide full view of the entire corridor, locating one (1) digital CCTV camera at the US 29 / NC 152 interchange.

Determine the exact location of each digital CCTV camera, obtain Engineer's approval of the locations, and install the cameras. Furnish site surveys, including but not limited to bucket truck surveys, to ensure camera coverage areas are acceptable.

NEW DMS

The Design-Build Team shall locate, design and install one (1) new front access DMS. Determine the exact location of the DMS, obtain the Engineer's approval of the location, and install the DMS as described below.

On US 29 northbound, at a location that avoids jurisdictional features, install one DMS between 850 feet to 1400 feet south of Centerview Street.

The DMS installed under this project must be selected from the NCDOT ITS & Signals 2012 Qualified Products List.

EXISTING DMS

The Design-Build Team shall disconnect, remove and stockpile the existing full size walk-in DMS, and remove and dispose of the existing DMS structure located on I-85 northbound at Daugherty Road. The Design-Build Team shall design and install a new overhead DMS structure, that spans the I-85 northbound travel lanes, at approximately the same location as the existing DMS structure. The Design-Build Team shall install the existing DMS on the aforementioned new overhead structure. The removal, transport, stockpiling, and installation of the existing DMS shall be in accordance with the requirements noted below:

- Prior to disconnecting and / or removing the existing DMS, the following shall occur:
  - To demonstrate that the DMS is fully operational, the Design-Build Team shall perform a DMS Operational Field Test in accordance with the DMS Testing Requirements Section of the *Dynamic Message Sign* Project Special Provision found elsewhere in this RFP. The aforementioned DMS Operational Field Test shall occur under the observation of Department representatives.
  - To document the DMS condition, the Design-Build Team shall take pictures of the DMS and provide them to the Engineer. Prior to the Design-Build Team beginning the disconnection and /

or removal process, the Engineer shall concur that the pictures sufficiently document the DMS condition.

- The Design-Build Team shall disconnect and remove the DMS and associated equipment. Except as directed otherwise by the Engineer, the Design-Build Team shall stockpile the removed DMS and associated equipment.
- To ensure that the DMS and associated equipment are not damaged, the Design-Build Team shall adhere to all manufacturer requirements, and use the appropriate equipment / methods, included but not limited to, fastening belts, during their removal, transport, stockpiling, and installation.
- In the event that the Design-Build Team damages the existing DMS and / or associated equipment, the Design-Build Team shall immediately report the damages to the Engineer. Prior to performing the DMS Operational Field Test required after installation (see below), the Design-Build Team shall repair or replace the damaged DMS and / or associated equipment.
- The Design-Build Team shall determine the exact location of the new overhead structure and obtain the Engineer's approval of the location prior to installing the overhead structure.
- The Design-Build Team shall install the existing DMS and all associated equipment and cabling on the new DMS overhead structure as described below. Once the DMS is installed and the Department has approved all required repairs / replacements, the Design-Build Team shall perform a DMS Operational Field Test in accordance with the requirements noted above.

CONDUIT

Furnish and install four (4) – 1 ¼ inch conduits and all necessary hardware, including tracer wire and delineator markers, by plowing, trenching or directional drilling in accordance with Section 1715 and 1733 of the 2012 *Standard Specifications for Roads and Structures* for installing the fiber optic communications cable. Conduit shall not be placed in the median or under the roadway, except for lateral traverse crossings.

Furnish and install one (1) – 2 inch conduit and all necessary hardware by trenching or directional drilling in accordance with Section 1715 of the 2012 *Standard Specifications for Roads and Structures* for installing the power service to the ITS devices.

Upon completion of the conduit installation furnish the Engineer with Plan of Record documentation showing the horizontal and vertical locations of the installed conduits.

JUNCTION BOXES

Furnish and install junction boxes (pull boxes) with all necessary hardware in accordance with Section 1098-5 of the 2012 *Standard Specifications for Roads and Structures*. Provide oversized junction boxes with minimum inside dimensions of 36"(l) x 24"(w) x 24"(d) inches for installing fiber optic communications cable. Install junction boxes at maximum intervals of fifteen hundred (1500) feet or at locations where underground splicing is necessary.

Furnish and install junction boxes (pull boxes) with all necessary hardware in accordance with Section 1098-5 of the 2012 *Standard Specifications for Roads and Structures*. Provide standard junction boxes with minimum inside dimensions of 16"(l) x 10"(w) x 10"(d) inches for electrical service.

Terminate the fiber optic communications cable in an oversized junction box with a splice enclosure capable of accepting a minimum of six cables at the south end of the project near Exit 63.

WOOD POLES

Furnish and install wood poles, with all necessary grounding systems and hardware necessary in accordance with Section 1720 of the 2012 *Standard Specifications for Roads and Structures*. Provide wood poles sized as necessary for the intended application.

6" x 6" x 8' treated wood posts for underground electrical service structures.

Furnish and install related items of work including but not limited to risers with weatherhead or heat shrink tubing and all necessary hardware in accordance with Section 1720 of the 2012 *Standard Specifications for Roads and Structures*.

CCTV METAL POLES

Design, furnish and install CCTV metal poles with drilled pier foundations, grounding systems, and all necessary hardware.

Reference the *High Definition CCTV Metal Pole and Field Equipment* Project Special Provision found elsewhere in this RFP for detailed material specifications and construction requirements.

FIBER OPTIC CABLE / DROP CABLE

Furnish and install a 144 single mode fiber-optic communications cable, drop cable assemblies, and all necessary hardware in accordance with the Section 1098-10 of the 2012 *Standard Specifications for Roads and Structures*.

Excluding the new DMS located on US 29 northbound, the Design-Build Team shall install drop cable assemblies to all ITS devices.

Throughout the project limits, install fiber-optic communications cable along I-85. Install fiber-optic communications cable from the I-85 / NC 152 interchange to the US 29 / NC 152 interchange. No fiber-optic communications cable will be installed along US 29.

Comply with the testing requirements in accordance with the Section 1731 of the 2012 *Standard Specifications for Roads and Structures*.

ELECTRICAL SERVICE

Install new electrical service with 200 Amps, 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 2012 *Standard Specifications for Roads and Structures*. (Reference the Utilities Coordination Scope of Work found elsewhere in the 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 of the 2012 *Standard Specifications for Roads and Structures*.

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.

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

At each digital CCTV camera location, install six-fiber fiber optic drop cable in 1 ¼ inch underground conduit. Splice the drop cable into the new 144-fiber fiber optic trunk cable as approved by the Engineer.

Refer to the *High Definition CCTV Metal Pole and Field Equipment* Project Special Provision found elsewhere in this RFP for detailed material specifications and construction requirements.

DYNAMIC MESSAGE SIGN

At locations approved by the Engineer, install DMS on the structure type required elsewhere in this RFP. Install DMS equipment in an approved equipment cabinet mounted on the structure. Install the following minimum equipment in each DMS equipment cabinet:

- DMS controller
- 4-port Field Ethernet switch
- UPS and power equipment, including power supplies, circuit breakers, surge protectors, and other related materials

Refer to the *Dynamic Message Sign* Project Special Provision found elsewhere in this RFP for detailed material specifications and construction requirements.

SINGLE MODE FIBER OPTIC COMMUNICATIONS CABLE AND DROP CABLE

Refer to Section 1098-10, 1098-11, 1730, and 1731 of the 2012 NCDOT *Standard Specifications for Roads and Structures*.

CONDUIT

Furnish and install four (4) – 1 ¼ inch inside diameter conduits and all necessary hardware in accordance with the provisions of Sections 1091 and 1715 of the 2012 NCDOT *Standard Specifications for Roads and Structures*.

TRACER WIRE

Furnish "green" insulated Number 14 AWG, THWN, stranded, copper wire to serve as a tracer wire in one of the conduits. Install the tracer wire in the same conduit through the entire length of the conduit system. Where tracer wire is spliced, provide waterproof butt splices. Splicing shall only be allowed only in junction boxes.

Develop a Requirements Definition Document that will form as the basis for the overall network architecture and design for the Department review and approval.

INTEGRATION

Upon completion of the ITS device installations, integrate the devices with the TRTMC - TMS. Provide all necessary central equipment, including but not limited to, digital video decoders, central Ethernet switch with appropriate number of copper and fiber optic ports, fiber optic and copper patch cords, and all other material and labor required for the successful integration of the devices.

Modify, as necessary, the existing central hardware and software modules including but not limited to databases, to provide operators access to new devices through the operators' Graphical User Interface. Coordinate with and obtain the Engineer's approval prior to starting any work in the TRTMC or modifying any existing hardware or software.

TESTING

Develop unit and system test plans and procedures for each ITS device and component and submit to the Engineer for review and approval. This includes but is not limited to digital CCTVs, DMS, fiber optic communications cable, local and central equipment.

Upon completion of the system installation and integration, conduct unit and system tests according to approved test plans and procedures. Provide all necessary test equipment.

In case of failures and substandard performance, the Design-Build Team shall identify the cause, repair or replace the faulty parts and components and repeat the test. If the problem persists, the entire unit causing the problem shall be replaced prior to retest.

After successful completion of all units and system test, submit the test reports along with the record of repairs and part replacements to the Engineer.

Design-Build Team shall coordinate with the utility companies performing Utilities by Others (UBO) work.

W. 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 3, 2011. Excluding the slopes noted below, temporary and permanent ground cover stabilization shall be provided within seven calendar days from the last land-disturbing activity. The Design-Build Team shall label all slopes subject to the seven-day ground cover stabilization requirements on all Erosion and Sedimentation Control Plans submitted to the Department for review and acceptance.

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

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

Temporary and / or permanent ground cover stabilization shall be provided in accordance with the provisions in this RFP, the Vegetation Management Procedure developed by the Design-Build Team and NCG-010000.

X. Additional Ground Cover Stabilization Requirements

Once the Design-Build Team identifies the area for stabilization due to inactivity, the Design-Build Team shall obtain concurrence from the Engineer and adhere to the following options based on the estimated amount of time the area will remain inactive. If the area stabilized exceeds the estimated timeframe, the Design-Build Team shall implement the next level of stabilization as directed by the Engineer.

All application rates noted below are in pounds per acre.

Short Term Stabilization - For areas that will remain inactive for up to 21 days

Erodible areas shall be stabilized utilizing non-vegetative cover. Non-vegetative cover options include straw mulch, hydraulic applied erosion control products or rolled erosion control products. If straw mulch is used, it shall provide 100% groundcover and be tacked sufficiently to hold the mulch in place for the duration of the inactive period. All other methods shall be installed according to the manufacturer’s directions.

LIABILITY INSURANCE

(3-19-14) DB1 G160

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

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

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

STATE HIGHWAY ADMINISTRATOR TITLE CHANGE

07-31-12) DB1 G185

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

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

SUBLETTING OF CONTRACT

(12-19-14) 108-6 DB1 G186

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

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

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

NAME CHANGE FOR NCDENR

(11-25-15) DB Z11

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

BRIDGE APPROACH FILLS

(9-1-11) DB4 R01

Description

Bridge approach fills include bridge approach fills for sub regional tier bridges and reinforced bridge approach fills. Construct bridge approach fills in accordance with the contract and Roadway Standard Drawing No. 422.10 or 422.11. Define "geosynthetics" as geotextiles or geomembranes.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Submit a report with the documentation and electronic data of the evaluation for each section to the Engineer within 10 days after completion of the smoothness testing. The report shall be in the tabular format for each 0.10 segment, or a portion thereof, with a summary of the MRI values and the localized roughness areas including corresponding project station numbers or acceptable reference points. Calculate the pay adjustments for all segments in accordance with the formulas in Sections (1) and (2) shown below. The Engineer shall review and approve all pay adjustments unless corrective action is required.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Submit a report with the documentation and electronic data of the evaluation for each section to the Engineer within 10 days after completion of the smoothness testing. The report shall be in the tabular format for each 0.10 segment, or a portion thereof, with a summary of the MRI values and the localized roughness areas including corresponding project station numbers or acceptable reference points. Calculate the pay adjustments for all segments in accordance with the formulas in Sections (1) and (2) shown below. The Engineer shall review and approve all pay adjustments unless corrective action is required.

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

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

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

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

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

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

PA = (165 – LR#) 5

Where:

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

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

TABLE 650-1
OGAFC GRADATION CRITERIA

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

ASPHALT PAVER - FIXED AND MOBILE STRING LINE
(9-1-11) DB6 R07

A mobile string line consisting of a 30 to 40 foot long ski is required for the widening and resurfacing on this project. A fixed string line is required for the new pavement construction on this project.

ASPHALT BINDER CONTENT OF ASPHALT PLANT MIXES
(6-07-12) DB6 R15

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

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

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